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Directory of Industrial  
Research and Development  
Facilities in Canada



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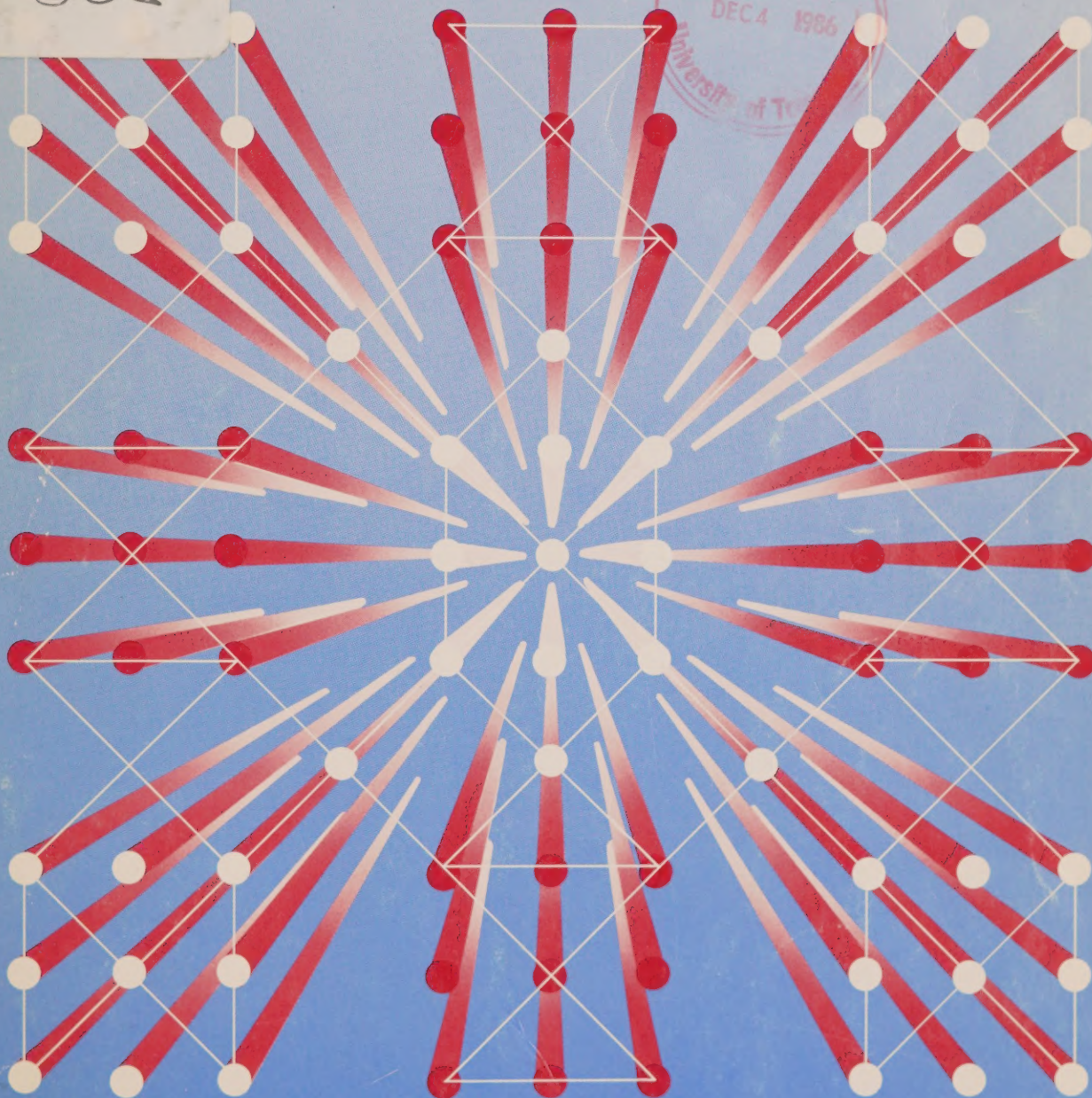
Division des sciences de la technologie  
et du stock de capital

Catalogue 88-205E Annual

Government  
Publication

# Directory of Industrial Research and Development Facilities in Canada, 1986

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-205



Canada

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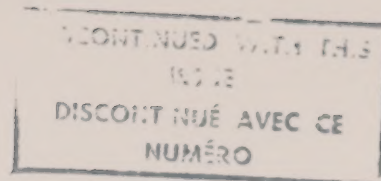
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**Statistics Canada**

Science, Technology and Capital  
Stock Division



# **Directory of Industrial Research and Development Facilities in Canada, 1986**

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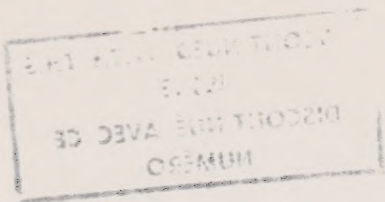
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# Directory of Industrial Research and Development Facilities in Canada, 1983

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## FOREWORD

Statistics Canada has frequently been asked to provide a directory which would not only serve as a record of scientific research and experimental development (R&D) facilities in Canada, but also help industry, universities, governments and others in locating R&D establishments capable of assisting them with their problems and requirements, and assist those who are seeking Canadian goods and services in a particular field. The National Research Council, in particular, has encouraged Statistics Canada to provide such a directory. The directory is also intended to contribute towards improving public awareness of the expanding and extensive technological capabilities in the Canadian private sector.

The Science, Technology and Capital Stock Division has now compiled an inventory of units performing R&D in Canada; the data base contains descriptive information on each R&D unit such as the areas in which R&D is being performed, specialized equipment, the number of scientists and engineers, as well as identifying information such as institutional name, address, and name of contact person. Information from this data base has been published in directories such as this one, with entries for each facility and a regional index.

This publication is intended to be a comprehensive directory of industrial research and development facilities in Canada. Data were collected by means of a voluntary survey over the summer and fall of 1985. About 800 R&D performing firms agreed to participate and provided information on approximately 920 R&D units.

The directory of industrial R&D facilities project will be terminated with this publication issue. Reduced resources in Statistics Canada have made it necessary to concentrate on "core" statistical areas.

A similar directory has been prepared for federal government establishments and is entitled *Directory of Federal Government Scientific and Technological Establishments, 1986*, (Catalogue No. 88-206E).

Statistics Canada has made a concerted effort to reproduce the collected material as accurately and completely as possible within the confines of format and scope and does not assume any liability caused by errors or omissions.

We are grateful to the companies who contributed thousands of person-hours completing the questionnaires, particularly those who provided detailed reports on R&D facilities of large and diversified organizations. Recognition is given to all those who worked directly or indirectly to the preparation of this directory, especially Mary-Lynne Redmond, Charles W. Reid and Don O'Grady. Comments from participating firms, or other users are invited.

This publication was prepared by Michel L. Boucher, Project Leader, Private Sector, under the direction of Humphrey Stead, Science, Technology and Capital Stock Division.



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FORMAT

AND

CONTENT OF ENTRIES



## FORMAT AND CONTENT OF ENTRIES

### Industrial R&D Facilities

The main body of the directory follows an alphabetical format for company names.

Information is published in the following manner:

#### COMPANY NAME

- Address

#### R&D Unit Name

- Address
- Administrative contact, position title, telephone number
- Scientific contact, position title, telephone number
- Total R&D personnel and number of scientists and engineers
- Description of R&D activities
- Specialized R&D facilities
- Current or potential activities of R&D Unit
- Nature of work performed for others
- Language(s) in which services are provided (English/French)

Not all entries contain the full range of information. The original language of the descriptive text is English unless otherwise stated.

### Geographic Index

Canada has been divided into eighteen regions. Within each region, all companies are listed in alphabetical sequence. To determine what facilities exist within a region, refer back to the specified companies in the main body of the directory.



INDUSTRIAL

R&D

FACILITIES



Number of Firms Included in the Directory and Number of R&D Firms Contacted, by Industry

Industries	Firms in the directory	Firms contacted	(A) (B)
	(A) number	(B) %	(E) %
Mining and oil wells			
Mining .....	11	26	42
Crude petroleum and natural gas .....	8	21	38
Total mining and oil wells .....	19	47	40
Manufacturing			
Food, beverages and tobacco .....	58	94	62
Rubber and plastic products .....	7	36	19
Textiles .....	7	16	44
Wood .....	5	8	62
Pulp and paper .....	16	26	62
Primary metals (ferrous) .....	6	13	46
Primary metals (non-ferrous) .....	7	11	64
Metal fabricating .....	27	88	31
Machinery .....	56	128	44
Aircraft and parts .....	9	14	64
Other transportation equipment .....	13	35	37
Telecommunication equipment .....	11	15	73
Electronic parts and components .....	15	34	44
Other electronic equipment .....	37	52	71
Business machines .....	20	38	53
Other electrical products .....	26	59	44
Non-metallic mineral products .....	10	14	71
Refined petroleum and coal products ...	8	10	80
Drugs and medicines .....	14	32	44
Other chemical products .....	58	102	57
Scientific and professional equipment .	29	41	71
Other manufacturing industries .....	32	69	46
Total manufacturing .....	471	935	50
Services			
Transportation and other utilities ....	14	31	45
Electrical power .....	7	7	100
Computer services .....	42	80	52
Engineering and scientific services ...	187	276	68
Other non-manufacturing industries ....	51	150	34
Total services .....	301	544	55
Total all industries .....	791	1,526	52



#### **A E S DATA INC**

1111 46th Avenue, Lachine, Québec, H8T 3C5.

##### **Atrium Engineering**

1900 Minnesota Court, Mississauga, Ontario, L5N 3C9.

Admin. Contact: J. Alsop, Director of Engineering,

Tel: (416) 821-9190.

Scientific Contact: J. Augustus, Vice President, Engineering,  
Tel: (416) 821-9190.

Personnel: Total is 80 of which 60 are scientists and engineers.

Activities: Office automation - file servers; personal computers.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: english.

##### **Lachine Engineering**

Contact: Nobil Youssef, Manager, Tel: (514) 634-7151.

Personnel: Total is 40 of which 20 are scientists and engineers.

Activities: Office automation - shared logic systems.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: both english and french.

#### **A-B BIOLOGICAL SUPPLIES INC**

P.O. Box 65, Grimsby, Ontario, L3M 4G1.

##### **Research Unit**

P.O. Box 2000, Stn A, Hamilton, Ontario, L8N 3Z5.

Contact: Dr. Jack Gauldie, Vice-President, Product Research & Development, Tel: (416) 575-0154.

Personnel: Total is 14 of which 8 are scientists and engineers.

Activities: Medical Diagnostic Test Systems using Immunochemical methods.

Current or Potential Work Performed for: self or parent company, other clients.

Nature of Work Performed for Others: contract R&D, consultation.

Language(s) in Which Services are Provided: english.

#### **A-CUBED INC**

5566 Tomken Road, Mississauga, Ontario, L4W 1P4.

##### **Research Unit**

Admin. Contact: Gary Black, President,

Tel: (416) 624-8878.

Scientific Contact: Peter Annan, Research Director,  
Tel: (416) 624-8878.

Personnel: Total is 19 of which 12 are scientists and engineers.

Activities: Electromagnetic systems and sensing technology; ground probing radar systems; data acquisition systems; real time signal processing systems; scientific data processing; microcomputer controlled instrumentation; geophysical methods for mineral exploration; geotechnical methods; computer/array processor interfacing; numerical analysis and computer simulation.

Facilities: Hewlett-Packard A-series minicomputer; analogic array processor; Bruning CAD system; Hewlett-Packard 9836 desktop computers with digitizers and drafting plotter.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation.

Language(s) in Which Services are Provided: english.

#### **A. COMEAU & ASSOCIATES LTD.**

4718 90A Avenue, Edmonton, Alberta, T6B 2P9.

#### **Research Unit**

Admin. Contact: AIE Comeau, President,

Tel: (403) 465-9961.

Scientific Contact: D. Kelly, Vice-President,

Tel: (403) 465-9961.

Personnel: Total is 22 of which 7 are scientists and engineers.

Activities: Electronic solutions to oil patch problems; Electronic controls for electric and gas motors; Automation and telemetry systems; Development of special instrumentation sensors; Heat tracing systems, automation and control; Petrochemical plant electrical controls.

Facilities: Motorola Development Systems; Environmental Test Chamber.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation.

Language(s) in Which Services are Provided: english.

#### **A. LASSONDE & FILS INC.**

170 5ième avenue, Rougemont, Québec, J0L 1M0.

##### **Research Unit**

705 rue Principale, Rougemont, Québec, J0L 1M0.

Admin. Contact: Jean-Paul Barré, Président, Directeur général, Tel: (514) 469-4926.

Scientific Contact: Jacinthe Fortin, Directeur de recherche,  
Tel: (514) 469-4926.

Personnel: Total is 5 of which 2 are scientists and engineers.

Activities: Research on colorant-extraction procedures, study of various types of packaging materials, research on enzymes, improvement of preserving methods for apple, grape, pear and other types of juice where there is a flocculation phase before particle separation.

Facilities: Oxygen analyser; computer; homogenizer (polytron); microbiology laboratory; Flottatest unit; crimper.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: both english and french.

Note: Descriptive text has been translated from French.

#### **A.C. NIELSEN COMPANY OF CANADA LIMITED**

160 McNabb Street, Markham, Ontario, L3R 4B8.

##### **New Business Development**

Admin. Contact: Jean-Francois Douville, V.P. - Manager,  
New Business Development, Tel: (416) 475-3344.

Personnel: Total is 5 of which none are scientists and engineers.

Activities: Marketing services using portable computers and other self-developed computer products; to conduct store surveys and studies involving collection of data. Fields covered - food and drug products (consumer goods); hardware products (computers, appliances, tools); NIAT (Nielsen Intelligent Auditing Terminal); special research into television viewing (Nielsen People Meter); optical scanning for coupons; portable scanning (UPC/BARCODES).

Current or Potential Work Performed for: self or parent company, other clients.

Nature of Work Performed for Others: consultation, testing and analysis.

Language(s) in Which Services are Provided: both english and french.

#### **A.C.I. AUDOR COMMUNICATIONS INC**

2700 Lancaster Road, Ottawa, Ontario, K1B 4T7.

#### Research Unit

Admin. Contact: R.P. Welland, General Manager,  
Tel: (613) 523-9933.

Scientific Contact: John E. Harris, Operations Manager,  
Tel: (613) 523-9933.

Personnel: Total is 5 of which 4 are scientists and engineers.

Activities: Communication control switching systems, including micro-processor systems. VHF/UHF radio direction finders and Antennas. H.F. radio antenna switching control.

Facilities: Test equipment for D/F systems.

Current or Potential Work Performed for: self or parent company.

Nature of Work Performed for Others: testing and analysis.

Language(s) in Which Services are Provided: english.

#### A.E.I. TELECOMMUNICATIONS (CANADA) LTD.

419 Notre Dame Ave, Winnipeg, Manitoba, R3B 1R3.

##### Development Engineering Dept.

Admin. Contact: Mr. K.R. Yates, President,  
Tel: (204) 942-7221.

Scientific Contact: Mr. I.G. Sutherland, Development Eng.  
Mgr., Tel: (204) 942-7221.

Personnel: Total is 12 of which 3 are scientists and engineers.

Activities: The Development Engineering Department designs Telecommunication Products, which are both Hardware and Software oriented, such as: Automatic Number Identification systems (ANIPAK), Emergency Reporting System (TELEPAK/ERS), Electronic programmable controllers, Telephone Answering Switchboards and other related Telephone Switching and Peripheral Equipment.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: english.

#### ABCO PLASTICS LIMITED

P.O. Box 299, Mahone Bay, Nova Scotia, B0J 2E0.

##### Research Unit

Admin. Contact: H.D. Steeves, P.Eng., Vice-President,  
Tel: (902) 624-8383.

Scientific Contact: G.A. Escher, P.Eng, Company Engineer,  
Tel: (902) 624-8383.

Personnel: Total is 12 of which 6 are scientists and engineers.

Activities: Research in Fiberglass reinforced plastics, design criteria, cyclical and acoustic testing, resistance to abrasion and ways to improve, chemical resistance, structures development, specialized piping. Production methods for FRP.

Facilities: Cyclic and acoustic testing; abraision testing.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: english.

#### ABITIBI-PRICE INC.

Toronto Dominion Centre, Toronto, Ontario, M5K 1B3.

##### Sheridan Park

2240 Speakman Drive, Mississauga, Ontario, L5K 1A9.

Admin. Contact: W. Labunski, Manager of Research Services, Tel: (416) 822-4770.

Scientific Contact: M.T. Neill, Vice-President, Research & Development, Tel: (416) 822-4770.

Personnel: Total is 51 of which 27 are scientists and engineers.

Activities: Wood pulping, bleaching, papermaking, and coating. Process and product development for newsprint, groundwood printing, and fine papers. Pulp, paper, and chemical testing.

Facilities: Pulping pilot plant; paper coater; printing presses.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: english.

##### Kenogami

Papeterie Kenogami (Mill), Jonquière, Québec, G7X 5J7.

Contact: W.G. Mihelich, Research Manager,  
Tel: (418) 542-4541.

Personnel: Total is 11 of which 3 are scientists and engineers.

Activities: Pulping and bleaching process development for newsprint and groundwood printing papers. Pulp, paper, and chemical testing.

Facilities: Pulping pilot plant.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: both english and french.

#### AC STATPOWER INC.

Suite 308, 3700 Gilmore Way, Burnaby, British Columbia, V5G 4M1.

##### Research Unit

Admin. Contact: Konrad Mauch, President,  
Tel: (604) 430-5645.

Scientific Contact: Frank Peabody, Vice-President,  
Tel: (604) 430-5645.

Personnel: Total is 5 of which 2 are scientists and engineers.

Activities: Power Electronics - battery chargers, DC to DC converters, 3-phase inverters. Electrical Machines - linear induction motors, design and analysis.

Facilities: Computers.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation.

Language(s) in Which Services are Provided: english.

#### ACCUGRAPH CORPORATION

204-50 Gervais Drive, Don Mills, Ontario, M3C 1Z3.

##### Research Unit

Contact: Paul Senechal, Vice-President, Product Engineering, Tel: (416) 441-2211.

Personnel: Total is 12 of which 8 are scientists and engineers.

Activities: Software - Particular emphasis on graphics and man-machine interfaces. Substantial work has been performed for the development of device independent graphics software. Unique man-machine interfaces have been developed and work is underway to develop CAI which includes authoring and delivery of software. Currently new development is underway to create new techniques for graphical display.

Facilities: VAX 11/750; Graphics Workstations; Various Micros.

Current or Potential Work Performed for: self or parent company, other clients.

Nature of Work Performed for Others: contract R&D.

Language(s) in Which Services are Provided: english.

#### ACME ENGINEERING PRODUCTS LIMITED

5706 Royalmount Ave., Montreal, Quebec, H4P 1K5.

##### Research Unit

Contact: Mr. G.S. Presser, President, Tel: (514) 342-5656.

Personnel: Total is 3 of which 2 are scientists and engineers.

Activities: Gas analyzer equipment particularly designed for the construction industry. High voltage (25kV) and lower voltage (600V) electric boilers and heating equipment.

Facilities: Gas analyzers and electronic equipment; High capacity electric power for testing.  
Current or Potential Work Performed for: self or parent company, other clients.  
Nature of Work Performed for Others: consultation, testing and analysis.  
Language(s) in Which Services are Provided: english.

#### **ACTOL CHEMICALS LTD.**

#6 Route 132, Delson, Québec, J0L 1G0.

##### **Research Unit**

Contact: Neil Tomiuk, R&D Manager, Tel: (514) 632-2200.  
Personnel: Total is 2 of which 1 is a scientist or engineer.  
Activities: Modification of starch: starch ethers, starch esters, anionic starches, cationic starches, etc; emulsion polymers: polyvinyl acetate emulsions, acrylic emulsions, co-polymers of the two; polyvinyl alcohol: modifications of polyvinyl alcohol.  
Current or Potential Work Performed for: self or parent company.  
Language(s) in Which Services are Provided: english.

#### **ADAPTIVE MICROELECTRONICS LTD**

97 Glen Cameron Road, Thornhill, Ontario, L3T 1N8.

##### **ADMIC Controls**

Admin. Contact: D. Rysier, Vice-President,  
Tel: (416) 881-4112.  
Scientific Contact: C. Rhodes, President,  
Tel: (416) 881-4112.  
Personnel: Total is 10 of which 8 are scientists and engineers.  
Activities: Application of microprocessors to: Energy Conservation; Load Management; Data Acquisition; Supervisory Control; Alarm Monitoring; Access Control; Submetering. Fields of Specialization include: High-rise apartment buildings, office buildings, nursing homes.  
Facilities: Data Acquisition Systems; Power Metering Systems; Temperature Calibration Equipment; Software Development; Facilities for M6809, M6805, 6502, IBM PC.  
Current or Potential Work Performed for: self or parent company, other clients.  
Nature of Work Performed for Others: consultation.  
Language(s) in Which Services are Provided: english.

#### **AEA ELECTRONIC LTD**

142 Perth Street, Richmond, Ontario, K0A 2Z0.

##### **Research Unit**

Contact: David P. Miller, President, Tel: (613) 838-2554.  
Personnel: Total is 10 of which 5 are scientists and engineers.  
Activities: Development of test instruments for telecommunications and data communications application. Investigative testing of data modems.  
Current or Potential Work Performed for: self or parent company.  
Language(s) in Which Services are Provided: english.

#### **AEG BAYLY INC.**

167 Hunt Street, Ajax, Ontario, L1S 1P6.

##### **AEG Bayly Inc. (Engineering Department)**

Admin. Contact: S.W. Higgins, V.P. Finance & Administration, Tel: (416) 683-8200.  
Scientific Contact: M. Feeney, V.P. Marketing & Sales, Tel: (416) 683-8200.  
Personnel: Total is 16 of which 5 are scientists and engineers.  
Activities: Digital Voice/data/Program Transmission Systems Development; Tone Control & Signalling Systems; Analog Filters; Analog Carrier Systems.

Current or Potential Work Performed for: self or parent company, government, other clients.  
Nature of Work Performed for Others: contract R&D, consultation.  
Language(s) in Which Services are Provided: english.

#### **AERO ENVIRONMENTAL LIMITED**

37 Hanna Avenue, Toronto, Ontario, M6K 1X2.

##### **Combustion Lab**

Contact: Michael F.C. Brooker, Vice President,  
Tel: (416) 535-1600.  
Personnel: Total is 2 of which 2 are scientists and engineers.  
Activities: Pursue higher combustion efficiencies in conjunction with improving heat transfer through improved heat exchangers. Specializing in combustion analysis of oil and gas burners.  
Facilities: MSA Infrared Analyzer; with Co2 & o2 readouts; Honeywell Strip Recorder for above; 12 point Thermocouple  
Current or Potential Work Performed for: self or parent company, government, other clients.  
Nature of Work Performed for Others: testing and analysis.  
Language(s) in Which Services are Provided: english.

#### **AEROSPACE ENGINEERING AND RESEARCH CONSULTANTS LIMITED**

4925 Dufferin Street, Downsview (North York), Ontario, M3H 5T6.

##### **Aerospace Test Facilities**

Contact: Dr. A.A. Haasz, Secretary Treasurer,  
Tel: (416) 667-7734.  
Personnel: Total is 11 of which 11 are scientists and engineers.  
Activities: Aeroacoustics; aerodynamics; air cushion technology; airfoils, hydrofoils, propellers; flight transportation and flight simulation; fusion energy technology; gasdynamics, sonic boom, shock waves; instrumentation development; laser applications; space dynamics and control; space simulation and vacuum technology.  
Facilities: Aeroacoustic laboratory; air-cushion test facility; flight simulator; laser laboratory; vacuum facilities; wind tunnels.  
Current or Potential Work Performed for: government, other clients.  
Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.  
Language(s) in Which Services are Provided: english.

#### **AGROPUR, COOPERATIVE AGRO-ALIMENTAIRE**

C.P. 6000, 510 rue principale, Granby, Québec, J2G 7G2.

##### **Centre de contrôle et recherche Agropur**

Contact: Roger N. Giroux, Directeur technique,  
Tel: (514) 375-1991.  
Personnel: Total is 11 of which 6 are scientists and engineers.  
Activities: Research, development and innovation in dairy science and technology; biochemistry; microbiology.  
Facilities: Column chromatograph; electrophoretic apparatus; high-pressure liquid chromatography (HPLC) column; gas chromatograph.  
Current or Potential Work Performed for: self or parent company, other clients.  
Nature of Work Performed for Others: testing and analysis.  
Language(s) in Which Services are Provided: english.  
Note: Descriptive text has been translated from French.

## **AIT ADVANCED INFORMATION TECHNOLOGY CORPORATION**

1390 Prince of Wales Drive, Ottawa, Ontario, K2C 3N6.

### **R&D Group - Imager Products Division**

36 Bentley Avenue, Nepean, Ontario, K2E 6T8.

Admin. Contact: Peter Smithers, General Manager,  
Tel: (613) 226-7800.

Scientific Contact: Tony Kittridge, General Manager of  
Imaging Products, Tel: (613) 727-1400.

Personnel: Total is 20 of which 10 are scientists and  
engineers.

Activities: Image processing: includes - optical character  
recognition - hand print analysis - data compression -  
document scanning. Signal processing: includes -  
algorithm development and simulations for radar,  
communications and other types of electronic signals.

Facilities: Computer development system; Datascope.

Current or Potential Work Performed for: self or parent  
company, government.

Nature of Work Performed for Others: contract R&D.

Language(s) in Which Services are Provided: english.

## **ALBERTA DAIRYMEN'S ASSOCIATION RESEARCH UNIT**

Department of Food Science, University of Alberta,  
Edmonton, Alberta, T6G 2P5.

### **Research Unit**

c/o Food Science Dept., Univ. of Alberta, Edmonton,  
Alberta, T6G 2P5.

Contact: Dr. Lech Ozimek, Professor, Tel: (403) 432-2665.

Personnel: Total is 1 of which 1 is a scientist or  
engineer.

Activities: Basic and applied dairy processing research.

Current or Potential Work Performed for: self or parent  
company, government.

Nature of Work Performed for Others: contract R&D,  
consultation, testing and analysis.

Language(s) in Which Services are Provided: english.

## **ALBERTA GOVERNMENT TELEPHONES COMMISSION**

19E-10020 100 Street, Edmonton, Alberta, T5J 0N5.

### **Network Facilities - Development**

19C-10020 100 Street, Edmonton, Alberta, T5J 0N5.

Admin. Contact: D. Wheatley, Secretary, Engineering  
Management, Tel: (403) 425-2676.

Scientific Contact: J. Johannsson, Engineer,  
Tel: (403) 425-2677.

Personnel: Total is 9 of which 9 are scientists and  
engineers.

Activities: The Network Facilities - Development R&D  
unit has been involved in the development of  
technologies to enhance the telephone Network's  
transmission systems. Action has specifically been taken  
in the areas of pole line digital radio, fiber optic  
measurements, free space laser communications and  
non-conventional power systems.

Facilities: Fully equipped electronics lab; Optics bench for  
fiber optic testing; Printed circuit board prototyping  
(ENG LAB); EMI isolation room (ENG LAB);  
Environmental test chamber (ENG LAB).

Current or Potential Work Performed for: self or parent  
company, other clients.

Nature of Work Performed for Others: contract R&D,  
consultation, testing and analysis.

Language(s) in Which Services are Provided: english.

### **Technical Support - Switching Systems**

15E 10020-100 Street, Edmonton, Alberta, T5J 0N5.

Admin. Contact: R. Pederson, Secretary Supervisor,  
Tel: (403) 425-3100.

Scientific Contact: P. Sherman, Planning Engineer,  
Tel: (403) 425-3104.

Personnel: Total is 5 of which 5 are scientists and  
engineers.

Activities: The Technical Support-Switching Systems R&D  
unit has been involved in the design development and  
testing of technologies to enhance the telephone  
network's switching systems. Action has been specifically  
taken on the development of ISDN protocols, switched  
data services and common channel signalling (CCS-7).

Facilities: Fully equipped electronics lab.

Current or Potential Work Performed for: self or parent  
company, other clients.

Nature of Work Performed for Others: consultation.

Language(s) in Which Services are Provided: english.

### **Technical Support - Local Networks**

15F-10020 100 Street, Edmonton, Alberta, T5J 0N5.

Admin. Contact: K. Pemberton, Secretary Supervisor,  
Tel: (403) 425-7062.

Scientific Contact: A. Winter, Planning Engineer,  
Tel: (403) 425-3970.

Personnel: Total is 5 of which 5 are scientists and  
engineers.

Activities: The Technical Support - Local Networks R&D  
unit has been involved in the design, development and  
testing of technologies to enhance the telephone  
network's local distribution system. Action has been  
specifically been taken in the development of ISDN  
protocols, Telidon, Party Line Emergency Access Device  
(PLEAD), DAV modems, Datapath, and multiparty line  
security improvements (RID).

Facilities: Fully equipped electronics lab; Local loop  
simulation facilities.

Current or Potential Work Performed for: self or parent  
company.

Language(s) in Which Services are Provided: english.

### **Utility Coordination**

15E-10020 100 Street, Edmonton, Alberta, T5J 0N5.

Admin. Contact: H. Koumarelas, Section Manager,  
Tel: (403) 425-4925.

Scientific Contact: H. Martin, Planning Engineer,  
Tel: (403) 425-2670.

Personnel: Total is 1 of which 1 is a scientist or  
engineer.

Activities: The Utility Coordination R&D unit is involved  
in the development and testing of technologies to  
enhance the electrical coordination of the telephone  
network. Action has been specifically taken in the area  
of development and testing of new equipment principals,  
procedures and mitigation.

Facilities: Access to engineering laboratory.

Current or Potential Work Performed for: self or parent  
company.

Language(s) in Which Services are Provided: english.

### **Mobile - Government and Telemetry**

16515-116 Avenue, Edmonton, Alberta, T5M 3V1.

Admin. Contact: E. Tucker, General Manager,  
Tel: (403) 231-7273.

Scientific Contact: I. Klatt, Divisional Manager,  
Tel: (403) 425-4421.

Personnel: Total is 4 of which 4 are scientists and  
engineers.

Activities: The Mobile-Government and Telemetry R&D  
unit has been involved in the development and testing  
of microprocessor controlled mobile radio, telemetry and  
control systems.

Facilities: Fully equipped electronics lab; 1-Tektronix  
microprocessor development system; 2-VME  
microprocessor development system; Environmental test  
chamber.

Current or Potential Work Performed for: self or parent  
company.

Language(s) in Which Services are Provided: english.

#### **Mobile - Technical Development**

16515-116 Avenue, Edmonton, Alberta, T5M 3V1.

Admin. Contact: E. Tucker, General Manager,  
Tel: (403) 231-7273.

Scientific Contact: I. Klatt, Divisional Manager,  
Tel: (403) 425-4421.

Personnel: Total is 10 of which 8 are scientists and engineers.

Activities: The Mobile-Technical Development R&D unit has been involved in the design, development and testing of technologies to enhance mobile radio telephony. Action has specifically been taken in the areas of voice and message paging, general mobile radio and the AURORA cellular radio system.

Facilities: Fully equipped electronics lab; Environmental test chamber; Mobile field laboratory; Precision R.F. generator.

Current or Potential Work Performed for: self or parent company, other clients.

Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.

Language(s) in Which Services are Provided: english.

#### **Mobile - Software Development**

6620 36 Street South East, Calgary, Alberta, T2C 2G4.

Admin. Contact: E. Tucker, General Manager,  
Tel: (403) 231-7273.

Scientific Contact: K.W. Hargrove, Divisional Manager,  
Tel: (403) 231-7994.

Personnel: Total is 3 of which 3 are scientists and engineers.

Activities: The Mobile - Software Development R&D unit has been involved in the development and testing of microprocessor software for a variety of microprocessor based mobile radio products.

Facilities: 2-Tektronix microprocessor development systems; Fully equipped electronics lab.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: english.

#### **ALBERTA LIVESTOCK TRANSPLANTS LTD.**

Site 12, Box 22, R.R. #4, Calgary, Alberta, T2M 4L4.

##### **Research Unit**

Admin. Contact: T.J. Mitenko, Sec. Treasurer,  
Tel: (403) 239-0000.

Scientific Contact: B.F. Shea, Ph.D., Research Embryologist, Tel: (403) 239-0000.

Personnel: Total is 12 of which 4 are scientists and engineers.

Activities: Biotechnology, bovine embryo transfer and associated technologies (i.e. embryo freezing, embryo micromanipulation (splitting), non-surgical techniques in livestock embryo transfer, embryo sexing, genetic engineering).

Facilities: Clinical facilities for large animal surgery; micro manipulation equipment (for genetic engineering projects).

Current or Potential Work Performed for: self or parent company, government.

Nature of Work Performed for Others: contract R&D.

Language(s) in Which Services are Provided: english.

#### **ALBERTA MASONRY INSTITUTE**

200-10712 176 Street, Edmonton, Alberta, T5S 1G7.

##### **Research Unit**

Contact: Dr. M.A. Hatzinikolas, Directory of Engineering,  
Tel: (403) 489-1768.

Personnel: Total is 2 of which 2 are scientists and engineers.

Activities: Masonry: Prefabricated masonry; Drilled in inserts in masonry construction; metal studs back-up systems to brick veneer walls.

Current or Potential Work Performed for: other clients.

Nature of Work Performed for Others: consultation, testing and analysis.

Language(s) in Which Services are Provided: english.

#### **ALBERTA SULPHUR RESEARCH LTD**

2500 University Dr. N.W., Calgary, Alberta, T2N 1N4.

##### **Sulphur Research Group**

c/o Department of Chemistry, University of Calgary, Calgary, Alberta, T2N 1N4.

Admin. Contact: Dianne E. Jorgenson, Manager,  
Tel: (403) 284-5372.

Scientific Contact: J.B. Hyne, Director,  
Tel: (403) 284-5372.

Personnel: Total is 13 of which 13 are scientists and engineers.

Activities: Basic research into problems encountered in the production, separation, conversion, handling, transportation and end use of the sulphur and sulphur compounds involved in the sour natural gas industry. The sulphur research program involves geochemistry, phase behaviour, kinetics and equilibrium studies and other more specialized expertise in electrochemistry and corrosion science. Heavy Oil research involves the study of the chemical reaction of water with components of heavy oils during steam stimulated enhanced recovery.

Facilities: High temperature/high pressure sour gas system; PAR Model 332-1 corrosion measurement system; sulphur IR analyzer; automated high performance liquid ion chromatograph system; GC/mass spectrometer.

Current or Potential Work Performed for: government, other clients.

Nature of Work Performed for Others: contract R&D.

Language(s) in Which Services are Provided: english.

#### **ALBERTA WHEAT POOL**

P.O. Box 2700, 505-2nd Street South West, Calgary, Alberta, T2P 2P5.

##### **Technical Services Dept.**

Admin. Contact: Mr. R.J. Klaffke, Tech. Services Mgr.,  
Tel: (403) 290-4904.

Scientific Contact: Dr. A. Kotecha, Senior Plant Breeder,  
Tel: (403) 248-5256.

Personnel: Total is 5 of which 3 are scientists and engineers.

Activities: Canola breeding; Joint venture barley breeding.

Facilities: Greenhouse; field house; quality laboratory.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: english.

#### **ALCAN INTERNATIONAL LIMITED**

1188 Sherbrooke Street West, Montréal, Québec, H3A 3G2.

##### **Arvida Laboratories**

P.O. Box 1250, Jonquière, Québec, G7S 4K8.

Contact: Dr. Donald W. Macmillan, Director,  
Tel: (418) 548-1121.

Personnel: Total is 200 of which 50 are scientists and engineers.

Activities: Arvida Laboratories R&D activities are associated with the processes of bauxite and alumina extraction, reduction of alumina to molten aluminum and casting; in other words, from bauxite to cold metal. In addition, these laboratories have a flagship role for Alcan in matters relating to the development and transfer of analytical technologies. The fields of

specialization are in bauxite beneficiation, alumina characterization, electro-chemistry, particularly as it relates to molten salt, electrolytes, improved utilization of thermal energy (from fossil fuels and electricity); carbon science, particularly as it relates to electrode materials used in the aluminum reduction process; magneto hydro-dynamics; on-line analysis for non-metallic inclusions; filtration for removal of non-metallic inclusions, alkalis, and hydrogen; preparation (batching) of aluminum alloys; on-line process control systems. In the area of analytical technology, the fields of specialization are in optical emission, X-ray fluorescence, inductively coupled plasma, and atomic absorption spectroscopy; gas, liquid, and ion chromatography.

Facilities: High D.C. amperage facilities for reduction cell pilot plant; Carbon material evaluation laboratory; G.C.M.S. (gas chromatograph coupled with mass scanning electron microscope coupled with energy dispersive X-ray fluorescence spectrometer; XRF (X-ray fluorescence spectrometer); XRD (X-ray diffractometer); O.E.S. (optical emission spectrometers); high temperature (2400 degrees C) induction furnace; controlled atmosphere furnaces.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: french.

#### **Kingston Research and Development Centre**

P.O. Box 8400, Kingston, Ontario, K7L 4Z4.

Contact: Dr. J.P. McGeer, Director, Tel: (613) 549-4500.

Personnel: Total is 330 of which 110 are scientists and engineers.

Activities: The nature of the R&D activities at Kingston is the production, fabrication and use of aluminum, including properties of related materials used in production fields, and to be used in combination with aluminum in marketed products. The fields of specialization are: chemistry and mineralogy of bauxite, production of alumina from ores, production of aluminum from aluminous materials, properties of carbonaceous materials (pitch, coke), aluminous chemicals and refractories, manufacture of aluminum fluoride, recycling of aluminum, chemistry of molten fluoride salts, and process modelling. For aluminum and its alloys they include, metallurgy, fabrication of products, surface properties, solidification, composites, surface coatings, welding, corrosion, shaping, deformation, compositional and metallurgical analysis, and process modelling. Other fields include energy conversion, ceramics, composites and light metals.

Facilities: D&I can line; molten metal spinning; magnetron sputtering; overhead cable vibration; scanning electron microscope; scanning transmission electron microscope; scanning auger microprobe; continuous casting; image analysis; FTIR; plasma spectrometer; VAX 780; full range of mechanical testing.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: both english and french.

#### **ALCHEM INC.**

P.O. Box 5002, Burlington, Ontario, L7R 3Y9.

#### **Research & Development Laboratory**

Admin. Contact: P.E. McManus, President, Tel: (416) 632-8791.

Scientific Contact: Dr. Shamel M. Shawki, Technical Manager, Tel: (416) 632-8791.

Personnel: Total is 22 of which 15 are scientists and engineers.

Activities: Product development and application technology re -specialty chemicals for the following:

Water Treatment (Boilers, Cooling Systems); Pulp and Paper; Steel; Petroleum Refining and Production; Mining.

Facilities: 2-AA; 2-IR; U.V.Spec.; GC; HPLC.

Current or Potential Work Performed for: other clients.

Nature of Work Performed for Others: testing and analysis.

Language(s) in Which Services are Provided: english.

#### **ALGOMA STEEL CORPORATION, LIMITED**

503 Queen Street East, Sault Ste. Marie, Ontario, P6A 5P2.

#### **Raw Materials and Metals Research**

Contact: Terence J. Burgan, Research Director,

Tel: (705) 945-2600.

Personnel: Total is 22 of which 14 are scientists and engineers.

Activities: RAW MATERIALS RESEARCH - Iron ore beneficiation, sintering and pelletization studies, coal technology and carbonization studies. METALS RESEARCH - Program directed toward process and product development of integrated steelworks. Laboratory services specialize in mechanical testing, heat treatment, dilatometric studies, metallographic products, and electron optics laboratory, SSCC testing of seamless producers.

Facilities: Bench scale mineral dressing equipment; Zeiss semi automatic petrographic microscope; furnace to evaluate high temperature properties of sinter and pellets; Cambridge 250 MK SEM Kevex 7000 EDS EDS probe; MMC quenching dilatometer and deformation head; Zeiss neophot 21 metallograph with closed circuit colour TV.

Current or Potential Work Performed for: self or parent company, government.

Nature of Work Performed for Others: contract R&D.

Language(s) in Which Services are Provided: english.

#### **ALIMENTS DELISLE LTEE**

100 rue De Lauzon, Boucherville, Québec, J4B 1E6.

#### **Département de recherche et développement des Aliments Delisle**

Contact: Bernard Aurouze, Directeur corporatif R&D,

Tel: (514) 655-7331.

Personnel: Total is 6 of which 3 are scientists and engineers.

Activities: Research into new dairy products; improvement of processes; technological innovation in the field.

Facilities: (Various); membrane technology.

Current or Potential Work Performed for: self or parent company, other clients.

Nature of Work Performed for Others: testing and analysis.

Language(s) in Which Services are Provided: both english and french.

Note: Descriptive text has been translated from French.

#### **ALLELIX INC**

6850 Goreway Drive, Mississauga, Ontario, L4V 1P1.

#### **Research Unit**

Admin. Contact: G. Strachan, Vice President &

Commercial Director, Tel: (416) 677-0831.

Scientific Contact: D. Burke, Vice President & Scientific Director, Tel: (416) 677-0831.

Personnel: Total is 187 of which 152 are scientists and engineers.

Activities: Application of Biotechnology to develop and commercialize agricultural products and processes, specialty fine chemicals and health care diagnostics. Improved crop varieties, soil micro-organisms;enzymes, food additives & other fine chemicals; enzyme diagnostic reagents, monoclonal antibodies, diagnostic test kits.

Facilities: fermentation pilot plant; DNA synthesizers & sequences; greenhouses.  
Current or Potential Work Performed for: self or parent company, government, other clients.  
Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.  
Language(s) in Which Services are Provided: english.

#### **ALLEN-BRADLEY CANADA LIMITED**

135 Dundas Street, Cambridge, Ontario, N1R 5X1.

##### **Research Unit**

Admin. Contact: W.E. Hetherington, President and Chief Executive Officer, Tel: (519) 623-1810.  
Scientific Contact: C.H. Reid, Vice President, Engineering, Tel: (519) 623-1810.  
Personnel: Total is 3 of which 2 are scientists and engineers.  
Activities: Design and development responsibility for medium voltage motor control equipment.  
Language(s) in Which Services are Provided: english.

#### **ALLEN-DRERUP-WHITE LTD**

Suite 505, 334 King Street East, Toronto, Ontario, M5A 1K8.

##### **ADW Ltd. Engineering**

Admin. Contact: Monique Gravel, Business Manager, Tel: (416) 863-1762.  
Scientific Contact: Mario Kani, Engineering Manager, Tel: (416) 863-1762.  
Personnel: Total is 8 of which 4 are scientists and engineers.  
Activities: R&D services include minimum energy technology for: residential and commercial H.V.A.C. (incl. heat pump systems and air-to-air heat exchangers); DHW heating and radiant space heating; building envelopes and components; air quality and low pollution environments; energy performance monitoring and analysis; proof-of-concept studies.  
Facilities: Microprocessor monitoring systems; thermal and humidity monitors; air flow meters/transducers.  
Current or Potential Work Performed for: government.  
Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.  
Language(s) in Which Services are Provided: english.

#### **ALLIED AUTOMOTIVE - CANADIAN FRAM LIMITED**

540 Park Avenue East, Chatham, Ontario, N7M 5M7.

##### **Canadian Fram Limited**

Contact: John W. Gleason, Vice-President, Chief Technical Officer, Tel: (519) 436-3803.  
Personnel: Total is 200 of which 75 are scientists and engineers.  
Activities: Automotive vehicle engine cooling and heat transfer; Automotive vehicle engine fuel economy and efficiency; Automotive vehicle engine intake system cleaning and silencing; Automotive vehicle engine emission control; Automotive vehicle sound attenuation; Automotive vehicle engine accessory drive control.  
Facilities: Automotive vehicle cooling, performance and anechoic chamber.  
Current or Potential Work Performed for: self or parent company, government, other clients.  
Nature of Work Performed for Others: contract R&D, testing and analysis.  
Language(s) in Which Services are Provided: english.

#### **ALLIED ENGINEERING COMPANY**

94 Riverside Drive, North Vancouver, British Columbia, V7H 2M6.

##### **Research Unit**

Admin. Contact: George G. Gilbert, President, Tel: (604) 929-1214.  
Scientific Contact: Raymond T. Tam, Mechanical Engineer, Tel: (604) 929-1214.  
Personnel: Total is 7 of which 4 are scientists and engineers.  
Activities: We are in constant research and development of boiler efficiency, structure of boiler, method of construction, problem solving and application. We are also in constant development of hand loaded shelving, method of storage, construction and application.  
Facilities: Combustion efficiency computer.  
Current or Potential Work Performed for: self or parent company.  
Nature of Work Performed for Others: consultation, testing and analysis.  
Language(s) in Which Services are Provided: english.

#### **ALMAX INDUSTRIES LIMITED**

61 Needham Street, Lindsay, Ontario, K9V 4Z7.

##### **Research Unit**

Admin. Contact: J. David Rook-Green, Controller, Tel: (705) 324-5100.  
Scientific Contact: Kamal El-Assal, General Manager, Tel: (705) 324-5100.  
Personnel: Total is 6 of which 5 are scientists and engineers.  
Activities: High frequency material, PzT (Piezoelectric) materials, surface acoustic wave material and devices, thermo electric generators, alpha and beta alumina, no change from.  
Facilities: Isotatic press; hot press; high temperature kiln; injection moulding machine; many pieces of smaller testing equipment.  
Current or Potential Work Performed for: self or parent company, government, other clients.  
Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.  
Language(s) in Which Services are Provided: english.

#### **AMBREX INTERNATIONAL INC.**

3700 Gilmore Way, Burnaby, B.C., V5G 4M1.

##### **AMBREX**

Admin. Contact: Randy Lomnes, President, Tel: (604) 438-9333.  
Scientific Contact: Franco Consadori, Vice President, Tel: (604) 438-9333.  
Personnel: Total is 3 of which 3 are scientists and engineers.  
Activities: Development of microcomputer based consumer products: R&D in gas sensing technologies; R&D in pressure transducers; Development of portable alarm and signalling devices.  
Facilities: Microcomputer based CAD equipment; Numerous personal computers and related peripherals; Test equipment, oscilloscopes, etc.  
Current or Potential Work Performed for: other clients.  
Nature of Work Performed for Others: contract R&D, consultation.  
Language(s) in Which Services are Provided: both english and french.

#### **AMCA INTERNATIONAL LIMITED**

Suite 607, 200 Ronson Drive, Rexdale, Ontario, M9W 5Z9.

**Amca International Limited; Research & Technology Centre**  
62 Steacie Drive, Kanata, Ontario, K2K 2A9.

Admin. Contact: Mr. D.E.H. Reynolds, Director, Research & Technology, Tel: (613) 592-6831.  
Scientific Contact: Dr. L. Malik, Manager, Metallurgy Section, Tel: (613) 592-6831.

Personnel: Total is 29 of which 11 are scientists and engineers.

Activities: Weldability and welding metallurgy; formability; low temperature fracture toughness characteristics of steels, and weld and HAZ; fracture analysis and fractography; welding process research; welding process and procedure development; corrosion; paint and paint system evaluation.

Facilities: HP85 data acquisition system; 75T rigid restraint machine; 635 kN fatigue and CTOD testing machine; 800A-Synergic & 1000A - AC sq. wave power sources; waveform analyzer. 20MHz-20k storage; Singleton salt-spray cabinet; Scanning Electron Microscope.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.

Language(s) in Which Services are Provided: english.

#### **AMDAHL COMMUNICATIONS INC.**

2330 Millrace Court, Mississauga, Ontario, L5N 1W2.

##### **Engineering Department**

Admin. Contact: L. Showalter, Director, Engineering, Tel: (416) 821-9900.

Scientific Contact: R. Habljak, Assistant Director, Product Development, Tel: (416) 821-9900.

Personnel: Total is 80 of which 43 are scientists and engineers.

Activities: This R&D unit designs and develops communications equipment for data and voice transmission, specifically data/voice multiplexers and data sets, primarily limited distance, and management systems for networks built from this equipment. This involves logic and signal processing circuit design, computer and microprocessor design, firmware and software development. A research activity is maintained to determine industry standards and requirements, remain abreast of applicable technological advances and contribute to new product planning.

Facilities: CAE/CAD Equipment.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: both english and french.

#### **AMERIGO TECHNOLOGY LTD**

7, 3401-19 St. N.E., Calgary, Alberta, T2E 6S8.

##### **Amerigo Research and Development Limited**

Admin. Contact: Mr. Julian M. Romocki, Vice-President - Technology, Tel: (403) 276-9735.

Scientific Contact: Dr. Emmanuel O. Egbogah, P.Eng., Engineering Manager, Tel: (403) 276-9735.

Personnel: Total is 12 of which 6 are scientists and engineers.

Activities: An energy technology company specializing in the manufacture and application of specialty oil recovery chemicals. A prime technology developer in the areas of well completions, stimulation designs (acidizing, foam fracturing) and client enhanced oil recovery optimization projects. Amerigo is also involved with land reclamation programs particularly with treatment of brine spills.

Facilities: Spinning drop interfacial tensiometer; high pressure core testing equipment; stirrer reactor vessel; low-medium pressure core testing equipment; cryogenic core plug preparation system.

Current or Potential Work Performed for: self or parent company, other clients.

Language(s) in Which Services are Provided: english.

#### **ANAKIN RESEARCH INC**

Unit 11C, 100 Westmore Drive, Rexdale, Ontario, M9V 5C3.

##### **Research Unit**

Contact: Wolfgang Dinger, Manager R&D, Tel: (416) 744-4246.

Personnel: Total is 6 of which 4 are scientists and engineers.

Activities: Handwriting Transmission System: capturing handwriting on a digitizing tablet, performing filtering, compression and encoding on it for transmission and subsequent display on a high-res graphics device. This process is performed in real-time. Handwriting Recognition System: performing hand character recognition utilizing a digitizing tablet and a ballpoint pen. Signature Verification System: allows signatures to be checked for authentication. The technique used takes into account timing information as well as shape information. High-Resolution Image Display System: a cost-effective high-resolution display (1024 by 1024) is in R&D prototype form, utilizing the Motorola 68000 processor as the general system controller.

Facilities: Logic Analyzer; High-Res Development Work Station (1024 by 1024 resolution); TMS32010 Development System (Digital Signal Processor); Various Micro Computers, Test Equipment.

Current or Potential Work Performed for: self or parent company, government.

Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.

Language(s) in Which Services are Provided: english.

#### **ANATEK MICROCIRCUITS INC.**

240 Brooksbank Avenue, North Vancouver, British Columbia, V7J 2C1.

##### **Thick Film RF Applications Lab**

Contact: Mathew D. Krzyckowski, Chief Engineer, Tel: (604) 980-7061.

Personnel: Total is 3 of which 2 are scientists and engineers.

Activities: Application of thick film microcircuit technology to radio frequency application.

Facilities: Rhodes Schwarz Vector analyzer; Hewlett Packard spectrum analyzer; Wiltron programmable sweep generator; Fluke synthesizer RF signal generator; Wiltron scaler network analyzer; Fluke frequency counter.

Current or Potential Work Performed for: self or parent company, other clients.

Language(s) in Which Services are Provided: english.

#### **ANDEC MFG. LTD**

18 Canso Road, Rexdale, Ontario, M9W 4L8.

##### **Research Unit**

Admin. Contact: S. De Walle, President, Tel: (416) 243-3456.

Scientific Contact: R. De Walle, Manager, Research, Tel: (416) 243-3456.

Personnel: Total is 8 of which 3 are scientists and engineers.

Activities: Development of nondestructive examination equipment and components in the fields of: eddy currents, ultrasonics magnetic particle, x-ray, gamma-ray acoustic emission, flux leakage.

Facilities: Special impedance bridges; eddy current instruments; ultrasonic instruments; magnetic particle equipment; magnetic field generators; coil winding equipment.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.  
Language(s) in Which Services are Provided: english.

#### **ANDERSON CONSULTANTS INC**

P.O. Box 547, St. Andrews, New Brunswick, E0G 2X0.

##### **Coveside Laboratory**

Contact: Dr. J.M. Anderson, President,  
Tel: (506) 529-3478.

Personnel: Total is 1 of which 1 is a scientist or engineer.

Activities: Salmonid (in particular Atlantic salmon and rainbow trout) aquaculture.

Facilities: Freshwater hatchery and grow-out facilities.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation.

Language(s) in Which Services are Provided: english.

#### **ANDICO MANUFACTURING LIMITED**

355 Champagne Drive, Downsview, Ontario, M3J 2C6.

##### **Research Unit**

Contact: Howard Dean, Vice-President,  
Tel: (416) 636-7300.

Personnel: Total is 7 of which 4 are scientists and engineers.

Activities: Heat transfer; electric heating; vinyl stability in varying environments; temperature regulation; electronic controls; bedding durability.

Facilities: Oscilloscope; analytical balance; environmental test chamber; viscometer; hot pack incubator; bedding - hex roller; wave solder machine; circuit etching machine.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: english.

#### **ANDREW ANTENNA COMPANY LIMITED**

606 Beech Street, Whitby, Ontario, L1N 5S2.

##### **Research Unit**

Admin. Contact: P.P. Levens, Contract Administration Manager, Tel: (416) 668-3348.

Scientific Contact: W.F. Weir, Engineering Manager,  
Tel: (416) 668-3348.

Personnel: Total is 8 of which 8 are scientists and engineers.

Activities: The specific areas of research and development are antennas, transmission lines and accessories from HF to 44 GHz. Antennas: parabolic reflectors, special shaped reflectors, horns, continuous line radiator (Radiax), phase arrays. Applications: microwave point-to-point, troposcatter, earth station, radar, navigation.

Facilities: Anechoic chamber; antenna test range; computer facilities; RF sweep frequency test equipment; computer control automatic antenna test equipment.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.

Language(s) in Which Services are Provided: english.

#### **APPIN SOLAR ASSOCIATES INC**

13-77 rue Eugenie, Winnipeg, Manitoba, R2H 0X6.

##### **Appin Manufacturing Research and Development Division**

Admin. Contact: Mr. George S. Bowman, Director,  
Tel: (204) 233-6755.

Scientific Contact: Mr. Grant N. Wichenko, Director,  
Tel: (204) 233-6755.

Personnel: Total is 5 of which 3 are scientists and engineers.

Activities: Solar systems, solar grain drying, active solar space heating systems, solar greenhouses; energy conservation building research, low-energy passive solar home, research, design and development; energy-efficient greenhouses, northern energy-efficient housing; energy-conserving building products.

Facilities: 2,000 sq ft research facility.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.

Language(s) in Which Services are Provided: english.

#### **APTEC ENGINEERING LIMITED**

4251 Steeles Avenue West, Downsview, Ontario, M3N 1V7.

##### **Research Unit**

Admin. Contact: Edward Zieba, President,  
Tel: (416) 661-9722.

Scientific Contact: Howard Malm, Vice-President, R&D,  
Tel: (416) 661-9722.

Personnel: Total is 8 of which 5 are scientists and engineers.

Activities: Semiconductor radiation detectors; gas filled radiation detectors (i.e., Geiger and ion chambers); microprocessor based radiation monitoring instruments; real time microprocessor based analyzers for on line measurement applications; PC based multi-channel analyzers and software.

Facilities: Semiconductor R&D facility; source facility; MDS (INTEL) systems.

Current or Potential Work Performed for: self or parent company, government.

Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.

Language(s) in Which Services are Provided: english.

#### **AQUANUMERICS INCORPORATED**

Suite 622, 75 King Street South, Waterloo, Ontario, N2L 1P2.

##### **Research Unit**

Contact: Dr. M. Chandrashekar, President,  
Tel: (519) 886-4951.

Personnel: Total is 2 of which 2 are scientists and engineers.

Activities: Computer based modelling and simulation of energy and resource systems. The organization has specialized in modelling and simulation of long term performance of solar energy system with emphasis on domestic water and space heating systems, industrial process water heating systems, photovoltaic energy systems, water resource systems, piping networks, municipal water distribution systems; the expertise also includes modelling of river flow and hydraulic systems.

Facilities: Mainly micro computers.

Current or Potential Work Performed for: government, other clients.

Nature of Work Performed for Others: contract R&D.

Language(s) in Which Services are Provided: english.

#### **AQUATIC INDUSTRIES LTD.**

Box 294, St. Andrews, New Brunswick, E0G 2X0.

##### **Research Unit**

Contact: L. Van Eeckhaute, Sec-Treas.,  
Tel: (506) 529-3909.

Personnel: Total is 5 of which 5 are scientists and engineers.

Activities: Marine life identifications; Diving; Field sampling for environmental studies; Aquatic population ecology.

Current or Potential Work Performed for: government, other clients.

Nature of Work Performed for Others: contract R&D, consultation.  
Language(s) in Which Services are Provided: english.

#### **ARCTEC CANADA LIMITED**

311 Legget Drive, Kanata, Ontario, K2K 1Z8.

##### **Polar Engineering Laboratory**

#16 - 6325 - 11th St. S.E., Calgary, Alberta, T2H 2L6.

Contact: Mr. B. Graham, Vice-President,  
Tel: (403) 253-4883.

Personnel: Total is 12 of which 10 are scientists and engineers.

Activities: Cold regions marine engineering; ice model basin using synthetic ice; ice pressure sensors - various types and sizes; floating body motion prediction (AQWA) in regular and irregular waves; offshore structure design and assessment; remote sensing and interpretation; naval architecture of icebreakers and ice transiting ships; data acquisition and analysis.

Facilities: Ice model basin (30m long); AQWA Suite (computer program); naval architectural programs; computer based data acquisition; 400T press.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.

Language(s) in Which Services are Provided: english.

#### **ARCTIC SCIENCES LTD.**

1986 Mills Road, R.R. 2, Sidney, British Columbia, V8L 3S1.

##### **Head Office**

Admin. Contact: Gary Wilton, General Manager,  
Tel: (604) 656-0177.

Scientific Contact: John R. Marko, Director,  
Tel: (604) 656-0177.

Personnel: Total is 13 of which 7 are scientists and engineers.

Activities: Research and development involving physical oceanography and sea ice, as funded by clients in government and private industry. Emphasis is placed on oceanographic instrumentation development, particularly in the use of acoustic methods; processing and analysis of sea-ice and water property data obtained from satellites and aircraft; scientific investigations of oceanic circulation; and collection and analysis of surface wave data.

Facilities: Computer System (PDP-11/24); Electronics Lab Equipment, Oceanographic Instrumentation.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation.

Language(s) in Which Services are Provided: english.

##### **East Coast Regional Office**

Unit AA, 100 Ilesley Avenue, Dartmouth, N.S., B3B 1L3.

Admin. Contact: David Fissel, President,  
Tel: (902) 465-3871.

Scientific Contact: Gary R. Wilton, Regional Manager,  
Tel: (902) 465-3871.

Personnel: Total is 3 of which 1 is a scientist or engineer.

Activities: Research and Development involving physical oceanography and sea ice, as funded by clients in government and private industry. Emphasis is placed on the development of oceanographic instrumentation and auxiliary equipment.

Facilities: Oceanographic Instrumentation; Electronics Lab Equipment.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.

Language(s) in Which Services are Provided: english.

#### **ARGUS CONTROL SYSTEMS LTD**

10-1480 Foster Street, White Rock, British Columbia, V4B 3X7.

##### **Research Unit**

Admin. Contact: Alec Mackenzie, Project Leader,  
Tel: (604) 536-3171.

Scientific Contact: Greg Wright, Project Leader,  
Tel: (604) 536-3171.

Personnel: Total is 4 of which 1 is a scientist or engineer.

Activities: Development of Hardware and Software to be used in environmental control and irrigation management in Agriculture and Forestry. We specialize in management of alternate energy and energy conservation equipment.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation.

Language(s) in Which Services are Provided: english.

#### **ARPECO ENGINEERING LIMITED**

5265 Creekbank Road, Mississauga, Ontario, L4W 1N3.

##### **Arpeco Engineering Department**

Admin. Contact: Allan R. Prittie, President,  
Tel: (416) 625-7044.

Scientific Contact: David Bagshaw, Engineering Manager,  
Tel: (416) 625-7044.

Personnel: Total is 9 of which 5 are scientists and engineers.

Activities: Developing advanced printing techniques and printing presses for the roll label industry. Developing advanced techniques for the inspection, slitting and rewinding of labels for the roll label industry.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: english.

#### **ARVID MACHINE TOOLS LTD.**

2679 Howard Avenue, Windsor, Ontario, N8X 3X2.

##### **Machine Tool Research & Development Group**

Admin. Contact: F. Rajic, President & General Manager,  
Tel: (519) 969-5540.

Scientific Contact: J. Gray, Chief Engineer,  
Tel: (519) 969-5540.

Personnel: Total is 5 of which 2 are scientists and engineers.

Activities: Research and development in machine tool industry.

Current or Potential Work Performed for: self or parent company, other clients.

Nature of Work Performed for Others: contract R&D, testing and analysis.

Language(s) in Which Services are Provided: english.

#### **ARVID PRODUCTIVITY SYSTEMS INC.**

2679 Howard Avenue, Windsor, Ontario, N8X 3X2.

##### **Automated Material Handling Systems Group**

Admin. Contact: F. Rajic, President & General Manager,  
Tel: (519) 969-5600.

Scientific Contact: W. Rogers, R&D Manager,  
Tel: (519) 969-5600.

Personnel: Total is 5 of which 2 are scientists and engineers.

Activities: Development of machinery, equipment, systems and technologies to process sugar cane in a novel way, in accordance with inventions and patents of S.E. Tilby and R.B. Miller.

Facilities: All equipment and facilities of Intercone Systems Inc. and its associated company Arvid Machine Tools Ltd.

Current or Potential Work Performed for: self or parent company, other clients.

Nature of Work Performed for Others: contract R&D, testing and analysis.

Language(s) in Which Services are Provided: english.

#### **ASL COMPUTERS LTD.**

817 Huntingwood Dr., Scarborough, Ontario, M1T 2L8.

##### **Micro Software, Office Automation**

Contact: Lan Nghiem-Phu, President, Tel: (416) 292-5284.

Personnel: Total is 2 of which none are scientists and engineers.

Activities: Office automation. Micro-based software training.

Current or Potential Work Performed for: self or parent company.

Nature of Work Performed for Others: consultation.

Language(s) in Which Services are Provided: english.

#### **ASSOCIATED R&D ENGINEERING INC.**

5583 Spruce Street, Burnaby, British Columbia, V5G 1Y7.

##### **Research Unit**

Contact: Dr. C. Guarnaschelli, President,

Tel: (604) 298-7511.

Personnel: Total is 3 of which 2 are scientists and engineers.

Activities: Coal Research (Coal dust control, development of monitoring methods and chemical suppressants). Cement Chemistry (Formulation of specialty products based on the application of superplasticizers). Wastewater Treatment (Metalplating, mining effluents and runoff, flocculation). Aeration of chemical and biological waste (CDN PATENT 1101138).

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: consultation, testing and analysis.

Language(s) in Which Services are Provided: english.

#### **ASTROLAB INC**

1164 RR #1, St-Elie D'Orford, Quebec, J0B 2S0.

##### **Research Unit**

Contact: Normand Dery, President, Tel: (819) 566-0280.

Personnel: Total is 2 of which 1 is a scientist or engineer.

Activities: Computers, electronics controls for automobile.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: french.

#### **ATLANTIC COAL INSTITUTE LIMITED**

P.O. Box 1594, Grand Lake Road, Sydney, Nova Scotia, B1P 6R8.

##### **Atlantic Coal Institute**

Contact: Dieter Birk, Executive Director,

Tel: (902) 539-2800.

Personnel: Total is 11 of which 2 are scientists and engineers.

Activities: Coal Petrography, Scanning Electron Microscopy, Coal Mineralogy, Organic Geochemistry, Mineralogy, Fossil Fuel Technology.

Facilities: Scanning Electron Microscope; Zeiss Universal Petrographic Microscope; TracorNorthern 5500 X-ray Micro Analyser; Leco Thermolytic-Hydrocarbon Analyser.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.

Language(s) in Which Services are Provided: english.

#### **AUTONETICS RESEARCH ASSOCIATES INC**

P.O. Box 518, Sooke, British Columbia, V0S 1N0.

##### **Research Unit**

Admin. Contact: Dr. K.H.V. Booth, Managing Director,

Tel: (604) 642-5352.

Scientific Contact: Dr. A.D. Booth, President,

Tel: (604) 642-5352.

Personnel: Total is 7 of which 4 are scientists and engineers.

Activities: X-Ray crystallography; ocean acoustics; digital computer design and programming; low-temperature, solid-state physics; numerical analysis.

Facilities: 6502, 280A, 68000 computers; On-line to Univac 1107, HP1000; full range of micro-photographic equipment; full range of electronic test equipment.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation.

Language(s) in Which Services are Provided: both english and french.

#### **AVMOR LTD.**

433 St. Helen Street, Montréal, Québec, H2Y 2L1.

##### **Avmor Ltd**

Contact: A. Morrow, President, Tel: (514) 849-8074.

Personnel: Total is 5 of which 4 are scientists and engineers.

Activities: Polymer emulsification, detergents, soaps, cosmetics, industrial cleaners. Electro mechanical parts.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: english.

#### **B H LEVELTON & ASSOCIATES LTD.**

8805 Osler Street, Vancouver, British Columbia, V6P 4G1.

##### **Research Unit**

Contact: B.H. Levelton, President, Tel: (604) 266-1411.

Personnel: Total is 6 of which 4 are scientists and engineers.

Activities: Food processing - flash drying, effect of sonic energy; Hazardous wastes - recovery of metals from sludges; Concrete - high strength concrete for arctic use; Lightweight aggregate - from coal mining waste; Biomass - hydrolysis; Petrochemicals - development of new products.

Facilities: Pressure reactors; gas chromatograph; atomic absorption spectrograph; hydraulic presses; glass fermentors.

Current or Potential Work Performed for: government, other clients.

Nature of Work Performed for Others: contract R&D, consultation.

Language(s) in Which Services are Provided: english.

#### **B.A. TRIPP & ASSOCIATES LTD**

23 Robb Blvd, Unit 1, Orangeville, Ontario, L9W 3L1.

##### **Research Unit**

Contact: Ben Tripp, President, Tel: (519) 941-4651.

Personnel: Total is 2 of which 1 is a scientist or engineer.

Activities: Solar source heat pump using solar collectors both glazed metal and unglazed plastic-coupled to heat pumps for year round space heating and domestic hot water. Development of systems with collector efficiencies of 200% to 400% and seasonal cop's of 2.5 to 4.0.

Facilities: Solar monitor; BTU computers; precision RTD system.  
Current or Potential Work Performed for: self or parent company, government.  
Language(s) in Which Services are Provided: english.

#### **B.C. HYDRO**

970 Burrard Street, Vancouver, British Columbia, V6Z 1Y3.

##### **Research and Development**

12388 88th Avenue, Surrey, British Columbia, V3W 7R7.

Admin. Contact: R.W. Shemko, Admin & Tech Services,  
Tel: (604) 590-7453.

Scientific Contact: Dr. H.M. Ellis, Director, Research & Development, Tel: (604) 590-7400.

Personnel: Total is 120 of which 50 are scientists and engineers.

Activities: Provides comprehensive research, development and testing facilities to aid in the solution of Hydro's technical problems relating to electricity and gas. The Chemical Research Department is engaged in research projects, field problem solving, and quality control testing of such things as environmental samples, new products, and in-service materials. The Electrical Research Department provides service comprising field, analytical, and laboratory projects related to Hydro's generation, transmission and distribution system. The Materials Research Department carries out materials research in the fields of mechanical, metallurgical and civil engineering.

Facilities: Extra high voltage hall; high power laboratory; gas and liquid chromatographs; mass spectrograph; PCB emission spectrograph; DuPont thermal analysis system; infrared spectrophotometers; PCB destruction equipment; electronic microscope; Modal analysis equipment; tensile test machine. Full range of mechanical test equipment including creep, impact and servo controlled tension and compression equipment. Non destructive test equipment including immersion testing equipment and a full range of radiographic facilities. Civil engineering test equipment including triaxial loading cell.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.

Language(s) in Which Services are Provided: english.

#### **B.E.L. - TRONICS LIMITED**

2422 Dunwin Drive, Mississauga, Ontario, L5L 1J9.

##### **Research Unit**

Admin. Contact: R.J.C. Sagl, President,  
Tel: (416) 828-1002.

Scientific Contact: Glen Martinson, Vice-President, Engineering, Tel: (416) 828-1002.

Personnel: Total is 15 of which 3 are scientists and engineers.

Activities: Microwave and R.F. circuit and system design. Design and development oscillators, antennas, mixers, low noise amplifiers, and filters in the frequency range 3-26 GHz. Utilizing microstrip or wave guide technology. Development of complete low noise receiving systems, to 26 GHz. Microwave Dopler intrusion detection systems.

Facilities: Computer aided engineering facilities: scalar network Analyser 10 MHz - 26 GHz; swept signal sources to 26 GHz; anechoic chambers for microwave RCVR sensitivity measurements; noise figure meter 10 MHz - 18 GHz; microstrip circuit fabrication and beam lead handling facilities; spectrum analysers 1- MHz - 22 GHz.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: english.

#### **BACH-SIMPSON LIMITED**

1255 Brydges Street, London, Ontario, N5W 2C2.

##### **Research Unit**

Admin. Contact: S.J. Williams, President,  
Tel: (519) 452-3200.

Scientific Contact: Victor Carriere, Chief Engineer,  
Tel: (519) 452-3200.

Personnel: Total is 14 of which 6 are scientists and engineers.

Activities: Medical diagnostic ultrasound, especially doppler blood flow detection and measurement; industrial measurement instrumentation including process control; plastic parts fabrication.

Facilities: Environmental lab; electrical standards; tool design and fabrication.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D.

Language(s) in Which Services are Provided: english.

#### **BACON, DONALDSON & ASSOCIATES LTD**

2036 Columbia Street, Vancouver, B.C., V5Y 3E1.

##### **Research Unit**

Admin. Contact: K.C. Donaldson, Secretary,  
Tel: (604) 879-8461.

Scientific Contact: M.J.V. Beattie, Manager,  
Tel: (604) 879-8461.

Personnel: Total is 16 of which 9 are scientists and engineers.

Activities: Hydrometallurgy - leaching, pressure leaching, precipitation, electrowinning, precious metal recovery. Mineral processing - surface chemistry, flowsheet development, novel extraction techniques. Mineralogy - optical microscopy, SEM-EDS analysis, x-ray diffraction. Physical metallurgy - corrosion studies, physical testing, alloy evaluation, welding specifications.

Facilities: Electron microscope (SEM, TEM); electrochemistry system; pressure leaching vessels; tensile and impact testing; analytic chemistry.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.

Language(s) in Which Services are Provided: english.

#### **BAE GROUP (THE)**

53 Bond Street, P.O. Box 6900, St. John's, Newfoundland, A1C 6H3.

##### **Research Unit**

Admin. Contact: Walter Tucker, Vice-President, Corporate Development, Tel: (709) 722-4622.

Scientific Contact: Douglas Morris, Chief Mechanical Eng.,  
Tel: (709) 722-4622.

Personnel: Total is 15 of which 8 are scientists and engineers.

Activities: Development of novel container design and mechanical system for handling and transfer of containers in a stern trawler; Conducting tests, modifications to dryer construction, preparation of reports, etc., for a novel salt fish process; Development of computer software for vessel containerization system; Development of rescue devices and systems for marine use; Development of a novel method for manufacturing insulated containers; development of energy conservation alternatives; Design of R&D Facilities.

Current or Potential Work Performed for: government, other clients.

Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.

Language(s) in Which Services are Provided: english.

#### **BALLARD RESEARCH INC**

1164 15th Street West, North Vancouver, British Columbia, V7P 1M9.

##### **Research Unit**

Admin. Contact: Shelagh Ballard, Office Manager, Tel: (604) 986-4104.

Scientific Contact: Dr. Keith B. Prater, Vice-President, Research and Development, Tel: (604) 986-4104.

Personnel: Total is 25 of which 11 are scientists and engineers.

Activities: R&D performed in fields of Electrochemistry and Electromechanical Engineering researching advanced power sources and related electrochemical systems. Current fields of specialization include lithium primary and secondary batteries.

Facilities: UV/VIS spectrophotometer; FTIR spectrometer; Electron microscope; Electrochemical apparatus; CADD/CAM system; Dry room.

Current or Potential Work Performed for: other clients.

Nature of Work Performed for Others: contract R&D.

Language(s) in Which Services are Provided: english.

##### **Ballard Technologies Corporation**

Admin. Contact: Shelagh Ballard, Office Manager, Tel: (604) 986-4104.

Scientific Contact: Dr. Keith B. Prater, Vice-President, Research and Development, Tel: (604) 986-4104.

Personnel: Total is 5 of which 2 are scientists and engineers.

Activities: R&D performed in fields of Electrochemistry and Electromechanical Engineering researching advanced power sources and related electrochemical systems. Current fields of specialization include Solid Polymer Electrolyte Fuel Cells and Ion Transport Membranes.

Current or Potential Work Performed for: other clients.

Nature of Work Performed for Others: contract R&D.

Language(s) in Which Services are Provided: english.

#### **BARDER INDUSTRIES LTD**

82 Doncaster Avenue, Thornhill, Ontario, L3T 1L3.

##### **Electronic Process Controls**

Admin. Contact: H. Barder, Director, Tel: (416) 889-6636.

Scientific Contact: S. Harding, Chief Engineer, Tel: (416) 889-6636.

Personnel: Total is 1 of which 1 is a scientist or engineer.

Activities: Complete design of controllers for automatic industrial machine control, logic circuit design, printed circuit board design and layout. Development of completed product.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: english.

#### **BARRINGER MAGENTA LIMITED**

304 Carlingview Drive, Rexdale, Ontario, M9W 5G2.

##### **Research Unit**

Admin. Contact: Carmela Succi, Director, Research & Marketing, Tel: (416) 675-3870.

Scientific Contact: Andrew Murray, Vice-President, Tel: (416) 675-3870.

Personnel: Total is 28 of which 16 are scientists and engineers.

Activities: Analytical instrumentation development - organic and inorganic trace detection systems. Analytical methods of development - organic and inorganic chemistry (geochemical environmental and health applications). Geochemical exploration of minerals and hydrocarbons (litho geochemistry, hydro geochemistry and biogeochemistry). Environmental modelling of

hydrogeochemistry (acid rain). R&D related to air pollution monitoring and analysis. Automation of analytical instrumentation (digital electronics and computer automation); Remote Sensing - (environmental pollutants, mineral and hydrocarbon exploration); R&D related to rapid instrumental detection of bacteria in soil and air; Spectroscopy - optical detection systems.

Facilities: Helium microwave detector; ion chromatograph; mercury spectrometer; reflectance spectrometer; LASERTRACE (inductively coupled Argon plasma spectrometer); gas chromatograph mass spectrometer.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.

Language(s) in Which Services are Provided: english.

#### **BARRINGER RESEARCH LTD**

304 Carlingview Drive, Rexdale, Ontario, M9W 5G2.

##### **Research Unit**

Admin. Contact: Carmela Succi, Director of Marketing, Tel: (416) 675-3870.

Scientific Contact: Andrew Murray, Vice President - Operations, Tel: (416) 675-3870.

Personnel: Total is 32 of which 20 are scientists and engineers.

Activities: Major advanced techniques and instrumentation for the earth sciences and for pollution monitoring.

Products: COTRAN (R) (airborne electromagnetics) metal detection; AIRTRACE (R); SURTRACE (R); LASERTRACE (R); GASPEC (R): (gas correlation spectrometer for sensing trace molecules gases); COSPEC (R) (SO<sub>2</sub> and NO<sub>2</sub> remote sensor); major technology domains: remote sensing, electro-optical; electromagnetics; aerosol collection and analysis.

Facilities: Correlation spectrometer; reflectance spectrometer; hand held ratioing radiometer; mercury spectrometer; laser fluorosensor; custom sensors based on optical, infrared, electromagnetic technology.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.

Language(s) in Which Services are Provided: english.

#### **BASF INMONT CANADA INC**

10 Craig Street, Brantford, Ontario, N3T 5M3.

##### **Research Unit**

845 Wyandotte Street West, Windsor, Ontario, N9A 5Y1.

Contact: R. Ordinario, Technical Director, Tel: (519) 256-3155.

Personnel: Total is 18 of which 12 are scientists and engineers.

Activities: Development of protective coatings for use by the transportation industry - original equipment automotive.

Facilities: Equipment related to the testing of protective coatings; corrosion testing equipment.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: english.

##### **BASF Inmont Presstite**

30 Armstrong Avenue, Georgetown, Ontario, L7G 4R9.

Admin. Contact: J.G. McWade, President, Tel: (519) 759-7000.

Scientific Contact: L.S. Hughes, Technical Director, Tel: (519) 256-3155.

Personnel: Total is 2 of which 2 are scientists and engineers.

Activities: Development of sealants and related products for automotive and industrial useage.

Facilities: Sealants and adhesive; testing equipment.  
Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: english.

#### Research Unit

Admin. Contact: J.G. McWade, President,  
Tel: (519) 759-7000.

Scientific Contact: L.S. Hughes, Technical Director,  
Tel: (519) 256-3155.

Personnel: Total is 12 of which 4 are scientists and engineers.

Activities: Development of protective coatings and related products for the automotive aftermarket.

Facilities: Equipment related to testing of protective coatings; computerized colour matching capability.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: english.

### BBC ENGINEERING & RESEARCH LTD

5210 Finch Avenue East, Unit 2, Scarborough, Ontario, L3P 2P5.

#### Research Unit

Contact: John Black, President, Tel: (416) 297-7584.

Personnel: Total is 3 of which 2 are scientists and engineers. (Note: Other personnel are available when required through associated companies)

Activities: Environment: gas, liquid and solids - specific areas include mercury, sulphur removal, chlorinated hydrocarbons, coal/biomass/peat energy conversion effluents. Energy conversion technology: gasification and combustion of solid fuels, dewatering and pressurized feeding liquefaction. Fluidized bed reactors - evaluation, testing and design. Process evaluation and costing: preliminary feasibility studies of new technologies. Computer simulation of processes and systems. Process equipment design.

Facilities: Fluidized bed reactors for high temperature and pressure; data acquisition; gas chromatography; atomic absorption spectrometer; medium scale pilot equipment; computer and process instruments; medium pressure reactors (3000 psi).

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation.

Language(s) in Which Services are Provided: english.

### BBT GEOTECHNICAL CONSULTANTS LTD

3051 Parsons Road, Edmonton, Alberta, T6N 1C8.

#### Research Unit

Admin. Contact: R. C. E. McKee, P.Eng, Manager of Engineering, Tel: (403) 463-9308.

Scientific Contact: Mr. Leonard Baskin, Director, Technical Services, Tel: (403) 463-9308.

Personnel: Total is 5 of which 4 are scientists and engineers.

Activities: Materials testing, geotechnical consulting.

Facilities: Geotechnical and materials testing laboratory.

Current or Potential Work Performed for: self or parent company, other clients.

Nature of Work Performed for Others: consultation, testing and analysis.

Language(s) in Which Services are Provided: english.

#### Research Unit

6423A Burbank Rd S.E., Calgary, Alberta, T2H 2E1.

Contact: Steve Musulak, P.Eng, Manager of Engineering, Tel: (403) 252-1106.

Personnel: Total is 3 of which 2 are scientists and engineers.

Activities: Materials testing and geotechnical consulting.

Facilities: Geotechnical and materials testing laboratory.

Current or Potential Work Performed for: self or parent company, other clients.

Nature of Work Performed for Others: consultation, testing and analysis.

Language(s) in Which Services are Provided: english.

#### Research Unit

221 Jessop Ave, Saskatoon, Saskatchewan, S7N 1Y3.

Admin. Contact: Andy Muir, Vice President of Operations, Tel: (306) 373-6161.

Scientific Contact: Brian Constant, P.Eng, V.P. of Engineering, Tel: (306) 373-6161.

Personnel: Total is 8 of which 6 are scientists and engineers.

Activities: Materials testing and geotechnical consulting.

Facilities: Geotechnical and materials testing laboratory.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.

Language(s) in Which Services are Provided: english.

#### Research Unit

608 McLeod St., Regina, Saskatchewan, S4N 4Y1.

Contact: Mr. Gene Froc, P.Eng, Manager of Engineering, Tel: (306) 949-2102.

Personnel: Total is 2 of which 1 is a scientist or engineer.

Activities: Materials testing and geotechnical consulting.

Facilities: Geotechnical and materials testing laboratory.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.

Language(s) in Which Services are Provided: english.

#### Research Unit

5406-52nd Ave, Lloydminster, Saskatchewan, S9V 1K5.

Contact: Mr. Bob Kennett, P.Eng, Manager of Engineering, Tel: (403) 875-8975.

Personnel: Total is 2 of which 1 is a scientist or engineer.

Activities: Materials testing and geotechnical consulting.

Facilities: Geotechnical and materials testing laboratory.

Current or Potential Work Performed for: self or parent company, other clients.

Nature of Work Performed for Others: consultation, testing and analysis.

Language(s) in Which Services are Provided: english.

#### Research Unit

#1, 70-17th St. W., Prince Albert, Saskatchewan, S6V 3X3.

Contact: Mr. Mark Humbert, P.Eng, Manager of Engineering, Tel: (306) 922-4888.

Personnel: Total is 4 of which 2 are scientists and engineers.

Activities: Materials testing and geotechnical consulting.

Facilities: Geotechnical and materials testing laboratory.

Current or Potential Work Performed for: self or parent company, other clients.

Nature of Work Performed for Others: consultation, testing and analysis.

Language(s) in Which Services are Provided: english.

### BEAK CONSULTANTS LIMITED

6870 Goreway Drive, Mississauga, Ontario, L4V 1P1.

Beak Analytical Services - A Division of Beak Consultants Limited

Admin. Contact: D.O. Mallen, P.Eng., Vice-President, Tel: (416) 671-2600.

Scientific Contact: John L. Robertson, Manager, Tel: (416) 671-2600.

**Personnel:** Total is 20 of which 20 are scientists and engineers.

**Activities:** Analysis and sampling development for UFFI; trace organics; indoor air quality.

**Facilities:** Analytical instrumentation.

**Current or Potential Work Performed for:** self or parent company, government, other clients.

**Nature of Work Performed for Others:** contract R&D, consultation, testing and analysis.

**Language(s) in Which Services are Provided:** both english and french.

#### **Research Unit**

**Admin. Contact:** D.O. Mallen, Vice-President,  
Tel: (416) 671-2600.

**Scientific Contact:** Jerry Fitchko, Ph.D./Michael F. Holloran, M.Eng., Environmental Services/Manager of Engineering

**Personnel:** Total is 35 of which 25 are scientists and engineers.

**Activities:** Environmental pathways analysis - dispersion, bioaccumulation and degradation of toxics and radionuclides in biosphere; elimination of toxic waste discharges; minimization THM formation in drinking water; risk assessment; uranium mine and tailings management.

**Current or Potential Work Performed for:** self or parent company, government, other clients.

**Nature of Work Performed for Others:** contract R&D, consultation, testing and analysis.

**Language(s) in Which Services are Provided:** both english and french.

#### **Beak Consultants, Limited, Toxicological Services**

**Admin. Contact:** D.O. Mallen, Vice-President,  
Tel: (416) 671-2600.

**Scientific Contact:** Gordon R. Craig, M.Sc., Manager of Toxicity Research Group, Tel: (416) 671-2600.

**Personnel:** Total is 5 of which 5 are scientists and engineers.

**Activities:** Ecotoxicological and biomonitoring test procedures development; amphibian mutagenic test system; chironomid deformities bioassessment.

**Facilities:** Equipment for continuous and static bio-assays; equipped trailers for on-site toxicity testing.

**Current or Potential Work Performed for:** self or parent company, government, other clients.

**Nature of Work Performed for Others:** contract R&D, consultation, testing and analysis.

**Language(s) in Which Services are Provided:** both english and french.

#### **BEALES STEEL PRODUCTS LTD**

20190-24th Avenue, Langley, British Columbia, V3A 4P5.

##### **Beales Steel Products Ltd, R&D Department**

**Admin. Contact:** Ken Wilby, President,  
Tel: (604) 534-7851.

**Scientific Contact:** Nick Cindrich, Engineering Manager,  
Tel: (604) 534-7851.

**Personnel:** Total is 7 of which 5 are scientists and engineers.

**Activities:** Research into the requirements and nature of specialized equipment for the earthmoving, mining and logging machinery industries. Specializes in the research and development of extreme service products.

**Facilities:** Destructive testing equipment; pressure testing equipment.

**Current or Potential Work Performed for:** self or parent company.

**Nature of Work Performed for Others:** contract R&D, testing and analysis.

**Language(s) in Which Services are Provided:** english.

#### **BEAVER'S DENTAL PRODUCTS**

P.O. Box 900, Morrisburg, Ontario, K0C 1X0.

##### **Research Unit**

**Admin. Contact:** Dalton Smith, Manager R&D,  
Tel: (613) 543-3791.

**Scientific Contact:** Willis Spencer, Manager R&D,  
Tel: (613) 543-3791.

**Personnel:** Total is 5 of which 2 are scientists and engineers.

**Activities:** Dental BUR development; specialized machine design; carbide development for BURs; carbide, steel fusion; grinding; pressing, sintering of carbide; plating; plastic injection molding.

**Current or Potential Work Performed for:** self or parent company.

**Language(s) in Which Services are Provided:** english.

#### **BECK TECHNOLOGY INCORPORATED**

P.O. Box 352, Regina, Saskatchewan, S4P 3A1.

##### **Research Unit**

1324 Wallace Street, Regina, Saskatchewan, S4N 3Z4.

**Contact:** Tom Beck, President, Tel: (306) 522-8448.

**Personnel:** Total is 6 of which 4 are scientists and engineers.

**Activities:** Electronics Research and Development, also Electronic, Mechanical and Energy systems. Fields of specialization: remote sensing; satellite and aerial imaging; mapping systems; remote control; environment control/temperature control; solid state image systems/analysis; tone control/telephone touch tone; voice response systems/synthesis; voice recognition systems; printed circuit board design and manufacture; motor control; servo systems; robotics controllers; shaft speed monitors; liquid level sensing; depth monitors; data acquisition; programming; process control; applications engineering.

**Current or Potential Work Performed for:** self or parent company, government, other clients.

**Nature of Work Performed for Others:** contract R&D, consultation, testing and analysis.

**Language(s) in Which Services are Provided:** english.

#### **BELL CANADA**

1050 Beaver Hall Hill, 19th Floor, Montréal, Québec, H2Z 1S4.

##### **Corporate Engineering - Headquarters**

160 Elgin Street, 11th Floor, Ottawa, Ontario, K1G 3J4.

**Admin. Contact:** P.J. Chagnon, Vice-President  
(Engineering), Tel: (613) 564-4600.

**Scientific Contact:** D.A. Carruthers, Assistant  
Vice-President (Engineering), Tel: (613) 567-1777.

**Activities:** Conducts research and development into all facets of telecommunications to maintain a world leadership position. Areas of Specialization include: Strategic Planning for the establishment of National and International Standards; research and development of digital switching and transmission systems for voice, data and image telecommunications services; research and development of fibre optics for loop and trunk applications in the telecommunications network; research and development on a wide range of new voice, data and image services to serve the business and residential markets.

**Current or Potential Work Performed for:** self or parent company.

**Language(s) in Which Services are Provided:** english.

#### **BENDIX AVELEX INCORPORATED**

P.O. Box 2140, Montreal, Québec, H4L 4X8.

**Bendix Avelex Incorporated - Engineering Department**

200 Laurentien Boulevard, Montreal, Quebec, H4M 2L5.

Admin. Contact: E. Segev, Director of Engineering,  
Tel: (514) 744-2811.

Scientific Contact: M.G. Quaid, Director of Special  
Projects, Tel: (514) 744-2811.

Personnel: Total is 76 of which 38 are scientists and  
engineers.

Activities: Fuel controls for gas turbine engines, land  
navigation systems, gun alignment and control systems,  
opto-electronics, including semi-conductor laser  
projection systems and infrared receivers, analysis of  
magnetic fields, ultrasonics, heat transfer, thermodynamic  
flowmeter systems.

Facilities: Microprocessor development system, HP64000

Current or Potential Work Performed for: self or parent  
company, government, other clients.

Nature of Work Performed for Others: contract R&D.

Language(s) in Which Services are Provided: english.

**BENNETT ENVIROMENTAL CONSULTANTS LTD.**

502-Kapilano 100 Park Royal, West Vancouver, British  
Columbia, V7T 1A2.

**B.E.C. R&D Unit**

Admin. Contact: John A. Bennett, President,  
Tel: (604) 922-0913.

Scientific Contact: Lawrence Pertile, Project Engineer,  
Tel: (604) 922-0913.

Personnel: Total is 7 of which 7 are scientists and  
engineers.

Activities: Oil spill combatting equipment ie.  
beachcleaning devices, rotary kilns incinerators for the  
disposal of oily wastes and general garbage; sensitivity  
mapping of coastlines for oil or hazardous waste  
spillages; the disposal of oil industry refuse.

Facilities: CAD Computer System; Manufacture Shop and  
Equipment.

Current or Potential Work Performed for: government,  
other clients.

Nature of Work Performed for Others: contract R&D,  
consultation, testing and analysis.

Language(s) in Which Services are Provided: english.

**BETA MACHINERY ANALYSIS LTD**

300-1615 10th Ave S.W., Calgary, Alberta, T3C 0J5.

**Research Unit**

Contact: Mr. Schuh, President, Tel: (403) 245-5666.

Personnel: Total is 2 of which 2 are scientists and  
engineers.

Activities: Acoustics in fluids.

Facilities: Lab models.

Current or Potential Work Performed for: self or parent  
company.

Language(s) in Which Services are Provided: english.

**BG CHECO INTERNATIONAL LIMITEE**

110 ouest boulevard Crémazie, Montréal, Québec, H2P 1B9.

**BGI/Automatec**

7700 De Lamartine, Anjou, Québec, H1J 2A8.

Admin. Contact: Guy J. Laflamme, Directeur général,  
Tel: (514) 353-8940.

Scientific Contact: Alain Charette, Directeur ingénierie,  
Recherche et développement, Tel: (514) 353-8940.

Personnel: Total is 21 of which 10 are scientists and  
engineers.

Activities: Electronic and automation systems;  
input/output systems for various applications, analogic  
metering system, distributed-intelligence SCADA with  
Ethernet system; Public transportation and admission  
control: slide-through reader system for access turnstiles,  
fluorescent lighting for rolling stock, magnetic validators

for buses, substations, highly sophisticated automated  
admission-control system; Industrial controls: software  
for latest-generation programmable controllers with  
high-speed local-communications network; Power-supply  
systems using guy-wire or phase-wire capacitive  
coupling; Low and medium voltage switch gear: shock  
resistant cells.

Facilities: Environmental chamber; shock-wave tests;  
high-frequency disturbance tests.

Current or Potential Work Performed for: self or parent  
company, other clients.

Nature of Work Performed for Others: contract R&D.

Language(s) in Which Services are Provided: both english  
and french.

Note: Descriptive text has been translated from French.

**BGH - PLANNING INC.**

209 St-Joseph boulevard ouest, Montréal, Québec, H2T 2P9.

**Research Unit**

Admin. Contact: Jacques Bernier, ing., Directeur général,  
Tel: (514) 273-5222.

Scientific Contact: Pierre Godbout, ing. Ph.D., Directeur -  
Recherche, Tel: (514) 273-5222.

Personnel: Total is 5 of which 2 are scientists and  
engineers.

Activities: Development of automated tools to facilitate  
urban planning decision making. This software, known  
under the trademark of URMAP, includes: URMAP  
PLAN - software providing for optimal urban land  
allotment; URMAP FISC - software for assessing the  
fiscal impact of urban development; URMAP HYDRAU  
- software providing for the optimization of storm water  
systems; URMAP ECONO - software for the analysis  
of municipal economics. We also use this software during  
professional consultations with municipalities.

Facilities: IBM microcomputer; Sperry computer.

Current or Potential Work Performed for: self or parent  
company.

Language(s) in Which Services are Provided: both english  
and french.

Note: Descriptive text has been translated from French.

**BIO-RESEARCH LABORATORIES LTD.**

87 Senneville Road, Senneville, Québec, H9X 3R3.

**Clinical and Analytical Services**

Admin. Contact: Arthur H. Kibbe, Director, Client  
Services, Tel: (514) 457-2280.

Scientific Contact: Douglas S. Greene, Scientific Director,  
Tel: (514) 457-2280.

Personnel: Total is 110 of which 25 are scientists and  
engineers.

Activities: Pharmacokinetics; bioavailability; MPLC, GC,  
GO/MS; gastrointestinal evaluations; phase I studies.

Facilities: Endoscopy; GC/MS; 25 HPLC's; 12 GC's.

Current or Potential Work Performed for: other clients.

Nature of Work Performed for Others: contract R&D,  
consultation, testing and analysis.

Language(s) in Which Services are Provided: english.

**BIOKINETICS AND ASSOCIATES LIMITED**

1481 Cyrville Rd, Ottawa, Ontario, K1B 3L7.

**Research Unit**

Contact: J.A. Newman, President, Tel: (613) 744-1073.

Personnel: Total is 5 of which 1 is a scientist or  
engineer.

Activities: Automotive safety. Automotive, industrial and  
military protection systems.

Facilities: Helmet impact testing apparatus.

Current or Potential Work Performed for: self or parent  
company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.

Language(s) in Which Services are Provided: english.

#### **BIOSTAR INC.**

Box 1000, Sub P.O. #6, Saskatoon, Saskatchewan, S7N 0W0.

##### **Research Unit**

Admin. Contact: P.G. Hodgman, Executive Vice-President, Tel: (306) 966-7473.

Scientific Contact: S.D. Acres, President, Tel: (306) 966-7473.

Personnel: Total is 6 of which 3 are scientists and engineers.

Activities: Biostar is involved in the research, development, testing and marketing of animal and poultry health care products and technology. The company is developing a technology base focused on diseases which occur in the gastrointestinal and reproductive systems of cattle, swine and poultry. Through in-house capabilities or subcontract arrangements, Biostar has access to a range of conventional and advanced technologies which provide the basis for developing and testing innovative products against specific common infectious diseases in livestock and poultry. Biostar has access to conventional technologies which include microbiology; immunology; virology; epidemiology; veterinary science. The company is also developing expertise in advanced technologies such as molecular biology; biotechnology (ie. recombinant DNA, peptide synthesis and monoclonal antibodies); gnotobiology.

Facilities: Peptide synthesizer; amino acid analyzer; fast pressure liquid chromatographer; high pressure liquid chromatographer; access to germ free animal isolation facilities.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.

Language(s) in Which Services are Provided: english.

#### **BIRD AND HALE LIMITED**

1263 Bay Street, Toronto, Ontario, M5R 2C1.

##### **Research Unit**

Admin. Contact: Linda Hellas, President, Tel: (416) 925-1147.

Scientific Contact: Ian M. Hale, , Tel: (416) 925-1147.

Personnel: Total is 4 of which 3 are scientists and engineers.

Activities: Remote Sensing Applications in Resource Development and Engineering; Teaching Aids and Manuals; Vermicomposting; Geophysical Systems Development as Applied to Industrial Minerals.

Current or Potential Work Performed for: government, other clients.

Nature of Work Performed for Others: contract R&D, consultation.

Language(s) in Which Services are Provided: english.

#### **BOART CANADA INC.**

2442 South Sheridan Way, Mississauga, Ontario, L5J 2M7.

##### **Research Unit**

Admin. Contact: R. Bond, Industrial Engineering Manager, Tel: (416) 872-7922.

Scientific Contact: B.C. Taylor, Process Development Manager, Tel: (416) 822-7922.

Personnel: Total is 7 of which 4 are scientists and engineers.

Activities: High temperature gas carburising of chromium steels (3% CHR); Microprocessor control of

heat-treatment installation; Studies of wear mechanisms of tungsten carbide and development of new grades suited to rock drilling; Improvement of fatigue life of carburized shafts by compressive stress studies - shot peening; Improvements in fatigue life of brazed joints by designing for strength; Evaluation of surface induction hardening as a substitute for carburizing; Improvements in ductivity of carburized components by iso-thermic transformations.

Facilities: Forster Coercimeter.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: english.

#### **BODEVEN INC**

1750 Sommet Trinite, St Bruno, Quebec, J3V 4P6.

##### **Research Unit**

Contact: J.P. Bowles, President, Tel: (514) 653-2630.

Personnel: Total is 3 of which 2 are scientists and engineers.

Activities: R&D for electrical power transmission particularly High Voltage DC Transmission; New energy systems ie. Ground Water Heat Pumps.

Facilities: HUDC Simulator; Computers and computer development equipment; Electronic instruments; Heat Pump Laboratory.

Current or Potential Work Performed for: self or parent company, other clients.

Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.

Language(s) in Which Services are Provided: english.

#### **BOOJUM RESEARCH LIMITED**

139 Amelia Street, Toronto, Ontario, M4X 1E6.

##### **Research Unit**

Contact: M. Kalin, Vice-President, Tel: (416) 963-9420.

Personnel: Total is 5 of which 3 are scientists and engineers.

Activities: Research and development of electronic instruments in data processing, satellite positioning, signal processing, data storage. Research and development of reclamation techniques and waste water treatment in the mining industry.

Current or Potential Work Performed for: government, other clients.

Nature of Work Performed for Others: contract R&D.

Language(s) in Which Services are Provided: english.

#### **BORDEN CHEMICAL, DIVISION OF THE BORDEN COMPANY LIMITED**

610 Coronation Drive, West Hill, Ontario., M1E 4R9.

##### **R&D Department - Borden Chemical, West Hill**

595 Coronation Drive, West Hill, Ontario, M1E 4R9.

Admin. Contact: T.F. Dempster, Director of Finance & Administration, Tel: (416) 281-6000.

Scientific Contact: M. Navratil, Manager, Research & Development, Tel: (416) 281-6000.

Personnel: Total is 16 of which 14 are scientists and engineers.

Activities: Development of resins and adhesives.

Facilities: Equipment for development, analysis and testing of resins and adhesives.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: english.

##### **R&D Department - Borden Chemical Western, Vancouver**

1550 Rand Avenue, Vancouver, British Columbia, V6P 3G2.

Admin. Contact: P. O'Dell, General Manager,

Tel: (604) 261-9356.

Scientific Contact: B. Scott, Laboratory Manager,  
Tel: (604) 261-9356.  
Personnel: Total is 5 of which 5 are scientists and  
engineers.  
Activities: Development of resins and adhesives.  
Facilities: Equipment for development, analysis and  
testing of resins and adhesives.  
Current or Potential Work Performed for: self or parent  
company.  
Language(s) in Which Services are Provided: english.

#### **BOREAL PROJECTS LTD**

P.O. Box 69 (Boreal Gardens), Churchill, Manitoba,  
R0B 0E0.

##### **Boreal Gardens**

Admin. Contact: Mr. William R. Erickson, President &  
Manager, Tel: (204) 675-8866.  
Scientific Contact: Mr. William A. Erickson, President &  
Manager, Tel: (204) 675-8866.  
Personnel: Total is 2 of which 2 are scientists and  
engineers.  
Activities: Energy conservation - particularly as applied  
to greenhouses in arctic and sub-arctic conditions;  
technical maintenance of on-going experiments put in  
place in Churchill by other researchers. Such  
maintenance is performed on an "as required" basis.  
Facilities: 700 sq.ft. electrically heated greenhouse space;  
1500 sq.ft. enclosed growing space; 500 sq.ft. greenhouse  
connected to heat sink; heat sink; 6kw wind-turbine.  
Current or Potential Work Performed for: self or parent  
company, government, other clients.  
Nature of Work Performed for Others: contract R&D,  
consultation.  
Language(s) in Which Services are Provided: english.

#### **BOW VALLEY RESOURCE SERVICES LTD**

1200-321 6th Avenue South West, Calgary, Alberta,  
T2P 2V8.

##### **Mainland Manufacturing**

15100 River Road, Richmond, British Columbia, V6V 1L5.  
Admin. Contact: C.S. Soderling, Vice President,  
Tel: (604) 273-1455.  
Scientific Contact: Frank Dean, Engineer,  
Tel: (604) 273-1455.  
Personnel: Total is 2 of which 2 are scientists and  
engineers.  
Activities: Horizontal disc waferizer for the wafer and  
oriented strand board industry. Our target is to  
constantly achieve the optimum size and thickness  
wafers with the minimum amount of fines. We are  
developing a variable speed infed to the waferizer  
which we feel is the key to consistent thickness and are  
also considering other assemblies within the machine to  
produce strands. This would then allow the one  
machine to produce both wafers or strands by simple  
interchange of components.  
Current or Potential Work Performed for: self or parent  
company.  
Language(s) in Which Services are Provided: english.

##### **Bow Valley Research**

1313 - 44 Avenue N.E., Calgary, Alberta, T2E 6L5.  
Admin. Contact: Harold Paskall, Vice-President, Special  
Projects, Tel: (403) 463-9335.  
Scientific Contact: Robin Rankine, Vice-President,  
Research, Tel: (403) 463-9335.  
Personnel: Total is 10 of which 3 are scientists and  
engineers.  
Activities: Process research - sulphur recovery processes;  
process analyzer development; computer software  
development; real time data acquisition; contract  
research.

Current or Potential Work Performed for: self or parent  
company, government.  
Nature of Work Performed for Others: contract R&D.  
Language(s) in Which Services are Provided: english.

#### **BREWING & MALTING BARLEY RESEARCH INSTITUTE**

206-167 Lombard Avenue, Winnipeg, Manitoba, R3B 0T6.

##### **Research Unit**

Contact: W.W. Sisler, Manager-Director,  
Tel: (204) 942-1407.  
Personnel: Total is 4 of which 1 is a scientist or  
engineer.  
Activities: Evaluation of the brewing quality of new  
barley selections as part of the grain variety licensing  
system.  
Facilities: Pilot Brewery.  
Current or Potential Work Performed for: self or parent  
company, government.  
Nature of Work Performed for Others: testing and  
analysis.  
Language(s) in Which Services are Provided: english.

#### **BRISTOL AEROSPACE LIMITED**

P.O. Box 874, Winnipeg, Manitoba, R3C 2S4.

##### **Bristol Aerospace Limited, Engineering Division**

Admin. Contact: J.M. Symonds, Manager, Eng.  
Administration, Tel: (204) 775-8331.  
Scientific Contact: W.R. Bullock, Vice-President,  
Engineering, Tel: (204) 775-8331.  
Personnel: Total is 145 of which 54 are scientists and  
engineers.  
Activities: Rocket propulsion, vehicle dynamics and  
design; rocket vehicle guidance; environmental data  
collection, satellite transmission, TCXO development;  
aircraft accessories; new composite materials processes.  
Facilities: Test and development laboratories; electronics  
development laboratory; rocket static test facility;  
environmental test laboratory; engineering prototype  
shops.  
Current or Potential Work Performed for: self or parent  
company, government.  
Nature of Work Performed for Others: contract R&D.  
Language(s) in Which Services are Provided: english.

#### **BROUWER TURF EQUIPMENT LIMITED**

R.R. #2, Woodbine Avenue, Keswick, Ontario, L4P 3E9.

##### **Research Development Department**

Admin. Contact: Gerry Brouwer, President,  
Tel: (416) 476-4379.  
Scientific Contact: Denver Dickie, Chief Engineer,  
Tel: (416) 476-4379.  
Personnel: Total is 14 of which 3 are scientists and  
engineers.  
Activities: Design, development and testing of equipment  
related to the turf industry including: planting  
equipment for turf seed and fertilizer; sod harvesters for  
sod producers; sod cutters for landscapers and rental  
stores; turf rollers for landscapers and rental stores;  
gang reel mowers, tow behind tractor mount and  
self-propelled for all applications; light weight rough  
terrain fork lifts for sod handling and other applications;  
grass collectors for sod producers and golf courses.  
Current or Potential Work Performed for: self or parent  
company.  
Language(s) in Which Services are Provided: english.

#### **BROWN, BOVERI, HOWDEN INC**

1510 Birchmount Road, Scarborough, Ontario, M1P 2G6.

**Howden Applied Research Limited**

30 Continental Place, Scarborough, Ontario, M1R 2T4.

Contact: David Sutton, Research Manager,

Tel: (416) 291-2539.

Personnel: Total is 5 of which 2 are scientists and engineers.

Activities: Air flow measurement - ducts to 50 inch diameter, 150 H.P. D.C. variable speed drive. Fan and turbo machinery rating - diagnosis of internal flows. Sound measurement - one third octave and narrow band real time analysis; spin chamber for overspeeding rotating components balancing and alignment, hot or cold, lab or field, model analysis vibration analysis system.

Facilities: Air flow measurement - 38 inch and 50 inch diameter ducts to A.M.C.A. standards; capacity to 50,000 C.F.M. and 20 inch water gauge static pressure; orifice plate or pitot-static measurement. 150 HP D.C. variable speed drive. Digital computer data reduction. Air flow diagnostic and research systems - flow studies by tufts and smoke generator; turbomachinery, diffuser and duct probing by 2 and 3 dimensional yaw probes, 24 tube manometer bank, manometer calibration by hook gauge. Sound measurement - narrow band real time analysis and one third octave band measurement of sound power by semi-reverberant method. Turbomachinery internal dynamic pressure investigation - pressure pulsations and other dynamic problems associated with rotating stall or surge investigated by transducers and real time analysis. Overspeed testing - proof testing of rotating components to 5000 rpm, diameter to 60 inches, width to 22 inches. Vacuum tests with 200 HP D.C. drive motor. Vibration capabilities - balancing and alignment, hot or cold, of turbomachinery in laboratory or field installation (Bentley-Nevada equipment), single or two-plane balancing; critical speed identification - Fast Fourier Transform Real Time Analysis and Modal Analysis of Dynamic Systems (Hewlett-Packard equipment).

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.

Language(s) in Which Services are Provided: english.

**BUCHAN, LAWTON, PARENT LTD**

5370 Canotek Road, Ottawa, Ontario, K1J 8X7.

**Research Unit**

Admin. Contact: Mark Lawton, Managing Director,  
Tel: (613) 748-3762.

Scientific Contact: Donald E. Buchan, President,  
Tel: (613) 748-3762.

Personnel: Total is 7 of which 4 are scientists and engineers.

Activities: Building Component Testing, Energy Equipment Testing, Development of Building and Equipment Test Procedures.

Facilities: Environmental Test Chamber; Computer Controlled Data Acquisition Systems; Building Field Test Equipment.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.

Language(s) in Which Services are Provided: both english and french.

**BUSKRO GRAPHIC ENGINEERING LTD**

959 Vistula Drive, Pickering, Ontario, L1W 2L7.

**Research Unit**

1750 Plummer Street Unit 16, Pickering, Ontario, L1W 3L7.

Admin. Contact: Henry A. Kropman, President,  
Tel: (416) 839-6018.

Scientific Contact: Roy Kropman, Vice President,  
Tel: (416) 839-6018.

Personnel: Total is 1 of which 1 is a scientist or engineer.

Activities: Machinery for mailing industry: Labelling machines; Custom built machinery.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: english.

**C S P FOODS LTD**

P.O. Box 190, 75 33rd Street East, Saskatoon, Saskatchewan, S7K 3K7.

**Corporate Office**

870-360 Main Street, Winnipeg, Manitoba, R3C 3Z3.

Contact: D.A. Asman, Treasurer, Tel: (204) 947-6871.

Personnel: Total is 4 of which 4 are scientists and engineers.

Activities: Vegetable oil; canola oil; refining; deodorization; sunflower oil; winterization; interesterification; margarine, shortening, salad oils; icings; flours; bakery mixes; emulsifiers; dough conditioners; wheat germ; wheat germ oil; pre-gelatinized flour; physical refining.

Facilities: Votator pilot plant; interesterification pilot plant; deodorizer pilot plant; bakery.

Current or Potential Work Performed for: self or parent company, government.

Nature of Work Performed for Others: contract R&D.

Language(s) in Which Services are Provided: english.

**C-I-L INC.**

90 Sheppard Avenue East, North York, Ontario, M2N 6H2.

**C-I-L Paints Research Laboratory**

1330 Castlefield Avenue, Toronto, Ontario, M6B 4B3.

Contact: Dr. Ian H. McEwan, Research Manager,  
Tel: (416) 787-2411.

Personnel: Total is 69 of which 30 are scientists and engineers.

Activities: Industrial finishes, protective coatings.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D.

Language(s) in Which Services are Provided: english.

**Chemetics International Ltd**

1818 Cornwall Avenue, Vancouver, British Columbia, V6J 1C7.

Admin. Contact: Mr. Osborne, Project Control Manager,  
Tel: (604) 734-1200.

Scientific Contact: Dr. Ian Warren, Technical Corporate Consultant, Tel: (604) 734-1200.

Personnel: Total is 12 of which 9 are scientists and engineers.

Activities: Field of R&D is related to new chemical processes and improvement of existing processes.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D.

Language(s) in Which Services are Provided: english.

**C-I-L Chemicals Research Laboratory**

2101 Hadwen Road, Sheridan Park Research Community, Mississauga, Ontario, L5H 2L3.

Admin. Contact: Dr. J.A. Sharp, Manager, Laboratories Administration, Tel: (416) 823-7160.

Scientific Contact: Dr. David Fung, Research Manager,  
Tel: (416) 823-7160.

Personnel: Total is 30 of which 26 are scientists and engineers.

Activities: Commodity chemicals for pulp and paper, sulphur products and agricultural chemicals.

Current or Potential Work Performed for: self or parent company, other clients.

Language(s) in Which Services are Provided: english.

#### **C-I-L Plastics Technical Centre**

142 Kennedy Road, Brampton, Ontario, L6W 3G5.

Contact: E.L. Kemp, Technical Centre Manager,

Tel: (416) 451-1630.

Personnel: Total is 32 of which 10 are scientists and engineers.

Activities: Polyethylene resins and films.

Current or Potential Work Performed for: self or parent company, other clients.

Language(s) in Which Services are Provided: english.

#### **CXA Ltd**

Maple Street, Brownsburg, Québec, J0V 1A0.

Contact: D. Welsh, Research Manager,

Tel: (514) 533-4201.

Personnel: Total is 24 of which 7 are scientists and engineers.

Activities: Explosive detonators and cord.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: both english and french.

#### **Alchem Inc.**

1055 Truman Street, Burlington, Ontario, L7R 3Y9.

Contact: R.W. Blakey, Controller, Tel: (416) 632-8791.

Personnel: Total is 11 of which 9 are scientists and engineers.

Activities: Water treatment chemicals.

Current or Potential Work Performed for: self or parent company, other clients.

Language(s) in Which Services are Provided: english.

#### **C-I-L Resource Business Area**

Suite 3050, Bow Valley Square Four, Calgary, Alberta, T2P 3H7.

Contact: Dr. H.H. Holton, Research Manager,

Tel: (403) 234-8660.

Personnel: Total is 8 of which 6 are scientists and engineers.

Activities: Research and Development in oil and gas specialty chemicals and services including oil well stimulation.

Current or Potential Work Performed for: self or parent company, other clients.

Language(s) in Which Services are Provided: english.

#### **C-I-L Explosives Research Lab.**

McMasterville, Québec, J3G 1T9.

Admin. Contact: Dr. J.P. Richard, Research and Technical Manager, Tel: (416) 229-8143.

Scientific Contact: Dr. M.P. Wenkoff, Laboratory Manager, Tel: (514) 467-3314.

Personnel: Total is 70 of which 30 are scientists and engineers.

Activities: Explosives.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.

Language(s) in Which Services are Provided: both english and french.

#### **CABLESHARE INC**

20 Enterprise Drive, P.O. Box 5880, London, Ontario, N6A 4L6.

#### **Research Unit**

Contact: R.C. Gauld, Corporate Counsel,

Tel: (519) 686-2900.

Personnel: Total is 120 of which 50 are scientists and engineers.

Activities: Computer software and systems specializing in X.25 packet switching networks and peripheral devices; electronic mail; Telidon graphics; interactive touch-screen videodisc systems.

Current or Potential Work Performed for: self or parent company, other clients.

Nature of Work Performed for Others: contract R&D, consultation.

Language(s) in Which Services are Provided: english.

#### **CABLESYSTEMS ENGINEERING, DIVISION OF CANADIAN CABLESYSTEMS LTD.**

York Mills Place, 855 York Mills Road, Don Mills, Ontario, M3B 1Z1.

##### **Technology Development**

Admin. Contact: N.F. Hamilton-Piercy, Vice President, Engineering & Technical Services.

Scientific Contact: E.N. (Ted) Chislett, Vice President, Technology.

Personnel: Total is 53 of which 34 are scientists and engineers.

Activities: Telecommunications Systems Research and Development; specialization in Broadband and Video; Co-Axial Communications Systems; Cellular Radio Systems; Data systems; computer interconnection systems; video distribution systems; microwave systems; telecommunications software development.

Facilities: DEC PDP 11/44 & DEC PDP 11/34 Computers; full complement of RF & Video Test & Measurement equipment

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.

Language(s) in Which Services are Provided: english.

#### **CAD-WARE ENGINEERING PROGRAMS LTD.**

215-4259 Canada Way, Burnaby, British Columbia, V5G 1H1.

##### **Research Unit**

Contact: S.P. Slinn, President, Tel: (604) 437-1722.

Personnel: Total is 2 of which 2 are scientists and engineers.

Activities: Development of Software for: CAD, Mechanical Engineering, Civil Engineering.

Facilities: Computer: HP-87; Computer: HP-200-16; Graphics Tablet: HP-9111; Plotter: HP-9872-T; Printer: Diablo 1750; Disc Drive: HP 9121.

Current or Potential Work Performed for: self or parent company, other clients.

Nature of Work Performed for Others: contract R&D, consultation.

Language(s) in Which Services are Provided: english.

#### **CAE DIECAST LTD**

15 Yale Crescent, P.O. Box 668, St.Catharines, Ontario, L2R 6Y1.

##### **Research Unit**

Admin. Contact: Mr. A.W. Van Eyke, Comptroller, Tel: (416) 688-6611.

Scientific Contact: E.A. Kozicki, Vice-President, Engineering and Marketing, Tel: (416) 688-6611.

Personnel: Total is 353 of which 5 are scientists and engineers.

Activities: Research and development on semi-permanent gravity aluminum castings for the O.E.M.'s of the automotive industry.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: english.

#### **CAE INDUSTRIES LTD.**

Suite 3060, P.O. Box 30 Royal Bank Plaza, Toronto, Ontario, M5J 2J1.

##### **CAE Electronics Ltd.**

8585 Côte De Liesse Rd, St Laurent, Québec, H4L 4X4.

Contact: Dr. G.M. McKinnon, Manager R&D,

Tel: (514) 341-6780.

Personnel: Total is 50 of which 45 are scientists and engineers.

Activities: Research and Development is carried out related to basic company products including flight simulators, nuclear simulators, energy control systems, Magnetic Anomaly Detection equipment and large scale real time computer systems; Particular areas of specialization include real time computer graphics and visual displays, controls and displays, eye tracking and head movements, electro-hydraulic servos and simulation of military equipment.

Facilities: Hydraulics test lab; air combat research simulator; visual perception, eye tracking lab; MAD development facility.

Current or Potential Work Performed for: self or parent company, government.

Nature of Work Performed for Others: contract R&D, consultation.

Language(s) in Which Services are Provided: english.

#### **CAIL SYSTEMS LTD.**

400-34 King Street East, Toronto, Ontario, M5C 1E5.

##### **Research & Development**

Admin. Contact: Ms. H. Thompson, Office Manager,

Tel: (416) 362-6100.

Scientific Contact: Mr. D. Leblanc, Dev. Dept. Manager,

Tel: (416) 362-1063.

Personnel: Total is 4 of which 4 are scientists and engineers.

Activities: Workstation support devices and facilities - hardware; software/firmware.

Facilities: Eprom Programmer; Oscilloscope; Micro Computer; Computer Terminals and Printers; Electronic Tools and Test Equipment; Prom Clome.

Current or Potential Work Performed for: self or parent company, other clients.

Nature of Work Performed for Others: contract R&D, consultation.

Language(s) in Which Services are Provided: english.

#### **CAMBRIAN ENGINEERING GROUP LTD (THE)**

2200 Argentia Road, Mississauga, Ontario, L5K 2N7.

##### **Research Unit**

Contact: P.W. Sleggs, P.Eng., Process Manager,

Tel: (416) 858-8010.

Personnel: Total is 12 of which 6 are scientists and engineers.

Activities: Main involvement is a variety of implant investigations and process development programs in processing of animal fats and oilseeds to oils and meals. The accent is on innovative ways for upgrading established processes, like rendering, refining, bleaching, deodorization and hydrogenation and winterization to improve yields, lower processing costs, and reduce energy inputs. Preliminary studies are generally carried out on bench scale equipment. In addition, Cambrian has access to pilot plant facilities where major processes equipment can be scaled up to meet future plant performance.

Facilities: GLC; hydrogenator; S.S. deodorizer; UV-Visible spectrophotometer; automatic Karl-Fisher titrator; AOM apparatus.

Current or Potential Work Performed for: government, other clients.

Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.

Language(s) in Which Services are Provided: english.

##### **Research Unit**

119 105th Street East, Saskatoon, Saskatchewan, S7N 1Z2.

Contact: A.S. Middleton, P.Eng., Manager, Special Projects,

Tel: (306) 374-8242.

Personnel: Total is 2 of which 2 are scientists and engineers.

Activities: Research and development of integrated systems for the application of photovoltaic technology to practical problems encountered in Canada and overseas. Research and development in solar thermal technology. Computer simulation.

Facilities: DEC 100 Computer System.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.

Language(s) in Which Services are Provided: english.

#### **CAN TEST LTD**

660 W. 7th Avenue, Vancouver, B.C., V5Z 1B5.

##### **Racing Research**

1523 West 3rd Avenue, Vancouver, British Columbia, V6J 1J8.

Admin. Contact: D. Timuss, General Manager,

Tel: (604) 734-7276.

Scientific Contact: Dr. K. Gallicano, Research Scientist,

Tel: (604) 734-7276.

Personnel: Total is 3 of which 2 are scientists and engineers.

Activities: Investigation into the metabolism and retention times of drugs in race horses. Microtoxicology.

Facilities: Gas Chromatograph/Mass Spectrometers (3); Liquid Chromatographs (3); Gas Chromatographs (4).

Current or Potential Work Performed for: self or parent company, government.

Language(s) in Which Services are Provided: english.

#### **CANADA CEMENT LAFARGE LTD**

606 Cathcart Street, Montréal, Québec, H3B 1L7.

##### **Research and Technical Centre**

Contact: Mr. Bernard Le Bras, Manager of Technical

Research Centre, Tel: (514) 738-1202.

Personnel: Total is 25 of which 11 are scientists and engineers.

Activities: New concrete products and new concreting processes; Special concretes - insulating, high strength, fluidized, increased durability, decorative, fibre-reinforced; Use of waste materials for making concrete and concrete products; Concrete admixtures; Concrete paving. Raw materials and cement manufacturing process, including grinding and pyroprocessing; reactivity, hydration and strength development of cement; optimization of process parameters, including energy and environmental considerations; assessment of waste materials for manufacture.

Facilities: Freeze-thaw chambers; weathering simulation; epoxy resin formulation; concrete testing. Calorimetry; particle size analysis; thermal analysis; cement and concrete testing; microscopy and x-ray; mine tailings test facilities.

Current or Potential Work Performed for: self or parent company, government.

Nature of Work Performed for Others: contract R&D.  
Language(s) in Which Services are Provided: both english and french.

#### **CANADA PACKERS INC.**

95 St. Clair Ave. West, Toronto, Ontario, M4V 1P2.

##### **Canada Packers Research Centre**

2211 St. Clair Avenue West, Toronto, Ontario, M6N 1K4.

Admin. Contact: R.B. MacGregor, Research Administrator,  
Tel: (416) 766-4311.

Scientific Contact: B.J. Schnyder, Research Director,  
Tel: (416) 761-4046.

Personnel: Total is 80 of which 48 are scientists and engineers.

Activities: Food product and process development (meat, dairy, edible oil, nut and vegetable products); Animal nutrition research; Pharmaceutical (Research organic and biochemical products).

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: english.

#### **CANADELLE INC.**

4405 boulevard Métropolitain est, Montréal, Québec, H1R 1Z4.

##### **Research Unit**

C.P. 850 Succ. St-Michel, Montréal, Québec, H2A 3M3.

Admin. Contact: Jacques Brault, Directeur, génie industriel,  
Tel: (514) 376-6240.

Scientific Contact: Roland Belin, Technicien,  
Tel: (514) 376-6240.

Personnel: Total is 5 of which 2 are scientists and engineers.

Activities: Electronics, mechanics and pneumatics applied to the development of machines designed to facilitate the production process (brassiere manufacturing).

Facilities: Ultrasound.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: french.

Note: Descriptive text has been translated from French.

#### **CANADIAN ASTRONAUTICS LIMITED**

1050 Morrison Drive, Ottawa, Ontario, K2H 8K7.

##### **Research Unit**

Contact: A.M. Furlong, Vice President of Operations,  
Tel: (613) 820-8280.

Personnel: Total is 250 of which 210 are scientists and engineers.

Activities: Space/satellite instrument design; EW system design; ASW system design; computer system design; airborne side looking radar design; synthetic aperture radar; earth station design; phased array antennas - UHF antennas; image processing system design.

Facilities: Clean room; tempest (shielded) facility; environmental chambers; RF/microwave test equipment; digital/analog test equipment; computing test equipment.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation.

Language(s) in Which Services are Provided: english.

#### **CANADIAN CANNERS LIMITED**

P.O. Box 540, 44 Hughson Street South, Hamilton, Ontario, L8N 3K6.

##### **Canadian Canners Limited Research Centre**

1101 Walkers Line, Burlington, Ontario, L7N 2G4.

Admin. Contact: C.J. Ross, Director, Technical Services & Regulatory Affairs, Tel: (416) 335-9700.

Scientific Contact: T.G. Stevens, Manager, Analytical Services, Tel: (416) 335-9700.

Personnel: Total is 23 of which 13 are scientists and engineers.

Activities: Food technology: Product development; microbiology; analytical chemistry; environmental - waste disposal. Fields of specialization in all of the above.

Facilities: Atomic absorption; polarograph; chromatographs; fully equipped product development pilot plant; computer system; food texture meters.

Current or Potential Work Performed for: self or parent company, government.

Language(s) in Which Services are Provided: english.

#### **Canadian Canners Agricultural Research Laboratory**

Anne Street, Dresden, Ontario, N0P 1M0.

Contact: C.J. Ross, Director, Technical Services and Regulatory Affairs, Tel: (416) 335-9700.

Personnel: Total is 6 of which 2 are scientists and engineers.

Activities: Plant breeding; crop horticulture.

Facilities: Micro Processor.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: english.

#### **CANADIAN FORMATION TESTERS LTD**

10342-176 Street, Edmonton, Alberta, T5S 1L3.

##### **Research Unit**

10342 176th Street, Edmonton, Alberta, T5S 1L3.

Contact: Mr. James Clark, President, Tel: (403) 484-3344.

Activities: Formation "Drill-Stem" Testing. A formation test is a temporary completion of a well and is run for three primary reasons: to obtain a physical sample of the fluids produced from the reservoir; to obtain a measured flow rate indication of the productivity of the formation; to obtain pressure data for the calculation of reservoir parameter for the recognition of natural or indirect anomalies around the well base. An Anchor device to "hook into" the wall of a drilled well to provide a means to test "Off-Bottom" without the necessity of running drill pipe to bottom for support. Advanced Anchor #3 - Currently being studied by the University of Alberta, Mechanical Engineering Dept. Proposal to be put forth by July 31/84 by this department on means of improving the current activities re: Anchor Tool. Also Walters Gil Tool Machine Ltd will have a prototype of improved Anchor "1 & 2" ready by Aug. 15th for testing.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: english.

#### **CANADIAN FRACMASTER LTD.**

800-300 5th Avenue South West, Calgary, Alberta, T2P 3C4.

##### **Fracmaster Research Lab.**

4625 90th Avenue South West, Calgary, Alberta, T2H 2H4.

Admin. Contact: Mr. Allan Lillies, Engineering Manager,  
Tel: (403) 264-8700.

Scientific Contact: Bob Greenhorne, Research Manager,  
Tel: (403) 279-8870.

Personnel: Total is 7 of which 4 are scientists and engineers.

Activities: Viscosification of liquid carbon dioxide; Emulsion Frac Fluids; Oilwell cement compositions, Fracture simulation to describe liquid co2 fractures.

Facilities: RPR Viscometer; Capillary Tube Viscometer; Liquid co2 Handling Equipment.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: english.

#### **CANADIAN GAS RESEARCH INSTITUTE**

55 Scarsdale Road, Don Mills, Ontario, M3B 2R3.

##### **Research Unit**

Contact: Dr. Orland Schaus, Director of Research,  
Tel: (416) 447-6465.

Personnel: Total is 18 of which 8 are scientists and engineers.

Activities: Natural gas utilization - processes and equipment; natural gas distribution equipment; natural gas combustion.

Facilities: Gas analysis equipment.

Current or Potential Work Performed for: self or parent company, government.

Language(s) in Which Services are Provided: english.

#### **CANADIAN GENERAL ELECTRIC COMPANY LTD**

25 King St. W. (PO Box 417) Comm Ct N., Toronto, Ontario, M5L 1J2.

##### **Engineering Laboratory**

107 Park St. North, Peterborough, Ontario, K9J 7B5.

Contact: J.E. (Tim) Benson, Manager of Engineering Laboratory, Tel: (705) 748-7729.

Personnel: Total is 200 of which 150 are scientists and engineers.

Activities: CAD/CAM, automatic production systems, remote handling, information systems, microelectronics and power electronics, computer application programming, computer modelling and analysis, control systems for power and industrial systems, static and rotating electrical machinery, bearings, heat transfer & fluid flow, lighting, jet engines, nuclear fuels, environmental and industrial hygiene.

Facilities: Measurements, tests and experiments on: electrical insulation properties; hydraulic test facility; magnetic property measurement, CAD/CAM; industrial and environmental hygiene; control systems; rotating machinery.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: both english and french.

#### **CANADIAN INSTITUTE OF METALWORKING**

1276 Sandhill Drive, P.O. Box 7317, Ancaster, Ontario, L9G 3N6.

##### **Computer Integrated Manufacturing**

Admin. Contact: Mary Ruth Linkert, Manager, Finance & Administration, Tel: (416) 648-5011.

Scientific Contact: Dr. Alan Frosst, President,  
Tel: (416) 648-5011.

Personnel: Total is 22 of which 17 are scientists and engineers.

Activities: Computer aided design, drafting and generation of numerical control data to manufacture high accuracy aerospace and mould and die components and tooling (CAD/CAM); special purpose software; justification of CAD/CAM equipment; field testing, calibration and machine tool accuracy; CAD/CAM training program for industry.

Facilities: CALMA interactive graphics DDM; MAHO MH-700C CNC Centre; Bostomatic 14-24 Cont. Mach.; AGIE EDM; EX- CELL-O 603; CINCINNATI Hydrotel.

Current or Potential Work Performed for: other clients.

Nature of Work Performed for Others: contract R&D.

Language(s) in Which Services are Provided: english.

#### **CANADIAN INSTRUMENTATION AND RESEARCH LIMITED**

2211 Dunwin Drive, Mississauga, Ontario, L5L 1X1.

##### **Research Unit**

Contact: M. Failes, President, Tel: (416) 828-1456.

Personnel: Total is 11 of which 6 are scientists and engineers.

Activities: All aspects of opto-electronic and optomechanical system development. Research in fiber optic sensors and systems. Development of single mode fiber optic couplers and components including acousto-optic devices.

Facilities: Scanning Fabry-Perot Interferometer; Intel microprocessor development system; monochromator; long length fiber ring resonator spectrometer.

Current or Potential Work Performed for: self or parent company, government.

Nature of Work Performed for Others: contract R&D.

Language(s) in Which Services are Provided: english.

#### **CANADIAN LIQUID AIR LTD**

1155 Sherbrooke Street West, Montréal, Québec, H3A 1H8.

##### **Research and Development Laboratory**

5035 Rouen Street, Montréal, Québec, H1V 1J3.

Contact: R. Blot, R&D Laboratory Manager,  
Tel: (514) 255-7741.

Personnel: Total is 17 of which 8 are scientists and engineers.

Activities: Main field of R&D is welding - design and production processes for filler metals: electrodes, Flux cored wires; development of shielding gases for welding processes; development of welding and cutting processes; welding metallurgy. R&D is also carried out in design and production of gas apparatus for welding or other applications.

Facilities: Emission spectrometer.

Current or Potential Work Performed for: self or parent company, other clients.

Nature of Work Performed for Others: testing and analysis.

Language(s) in Which Services are Provided: english.

##### **Research Department**

2410 Ville Marie Street, Montréal, Québec, H1V 3K5.

Contact: Robert Lee, Director - Research,  
Tel: (514) 842-5431.

Personnel: Total is 10 of which 5 are scientists and engineers.

Activities: Enhanced recovery oil; ferrous and non ferrous metallurgy; pulp and paper; wastewater treatment.

Current or Potential Work Performed for: self or parent company, other clients.

Nature of Work Performed for Others: testing and analysis.

Language(s) in Which Services are Provided: english.

#### **CANADIAN MARCONI COMPANY (CMC)**

2442 Trenton Avenue, Montréal, Québec, H3P 1Y9.

##### **Avionics Division, Technology and Product Development Group**

415 Legget Drive, Kanata, Ontario, K2K 2B2.

Contact: S. Rauch, Group Manager, Tel: (613) 592-6500.

Personnel: Total is 53 of which 42 are scientists and engineers.

Activities: Digital avionics; Intelligent instruments and controls; Electronic warfare; System engineering/integration; Navigation systems; Global Positioning System receivers; Integrated control and display system

Facilities: VAX 750; HP 8510; HP 64000 Terminals.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation.

Language(s) in Which Services are Provided: both english and french.

#### **Commercial Communications Division**

Contact: J.C. Benitah, Engineering Manager,  
Tel: (514) 341-7630.

Personnel: Total is 45 of which 25 are scientists and engineers.

Activities: Development of communications: VHF/UHF/HF products for commercial applications; radar;

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D.

Language(s) in Which Services are Provided: both english and french.

#### **Components Division**

Admin. Contact: Mr. D. Rosenthal, Vice-President,  
Tel: (514) 341-7630.

Scientific Contact: Mr. M. Bar Urian, Engineering Manager, Tel: (514) 341-7630.

Personnel: Total is 40 of which 20 are scientists and engineers.

Activities: NVG display components, multi-layer leadless chip carrier printed circuit boards, specialized microwave components and power conversion systems.

Current or Potential Work Performed for: self or parent company, other clients.

Nature of Work Performed for Others: contract R&D.

Language(s) in Which Services are Provided: both english and french.

#### **DataComm Products Department**

415 Legget Drive, Kanata, Ontario, K2K 2B2.

Admin. Contact: J. Bedford, Department Manager,  
Tel: (613) 592-6500.

Scientific Contact: R. Beasley, Business Planning,  
Tel: (613) 592-6500.

Personnel: Total is 35 of which 20 are scientists and engineers.

Activities: Telex switching systems.

Facilities: Protocol analyser; Switching system load generating equipment; Terminal protocol generator.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: consultation.

Language(s) in Which Services are Provided: both english and french.

#### **Defence Communications Division**

Admin. Contact: George Innes, Manager, New Products,  
Tel: (514) 341-7630.

Scientific Contact: Raymond Cadieux, Manager,  
Engineering, Tel: (514) 341-7630.

Personnel: Total is 180 of which 45 are scientists and engineers.

Activities: Tactical communications equipment.

Current or Potential Work Performed for: self or parent company, government.

Nature of Work Performed for Others: contract R&D.

Language(s) in Which Services are Provided: both english and french.

#### **Radar Division**

415 Legget Drive, Kanata, Ontario, K2K 2B2.

Admin. Contact: Frank Driscoll, General Manager,  
Tel: (613) 592-6500.

Scientific Contact: Dr. S. Sankar, Senior System Design Specialist, Tel: (613) 592-6500.

Personnel: Total is 48 of which 26 are scientists and engineers.

Activities: Radar: ship surveillance; surface search systems and related equipment.

Current or Potential Work Performed for: self or parent company, government.

Language(s) in Which Services are Provided: both english and french.

#### **CANADIAN NATIONAL RAILWAYS**

935 de la Gauchetière West, Montréal, Québec, H3B 2M9.

##### **CN Technical Research Centre**

3950 Hickmore, St-Laurent, Quebec, H4N 1K2.

Admin. Contact: P. Berthiaume, Assistant Chief of Technical Research, Tel: (514) 343-5338.

Scientific Contact: Dr. R. Cass, Chief of Technical Research, Tel: (514) 343-5425.

Personnel: Total is 84 of which 50 are scientists and engineers.

Activities: The Technical Research Centre is a rail oriented problem solving facility responding to the many needs associated with its operation. The Engineering Research group is responsible for the technological developments and the Materials and Processes Research group is concerned with the chemical and metallurgical component of the railway. The Centre supplements efforts of various planning groups in pure research or equipment development improvement and in process development, implementation and testing of railway control and operations. A subsidiary test facility to the Centre allows full scale testing of modifications and prototypes.

Facilities: Infrared spectrophotometer; A.A. spectrophotometer; U.V. visible spectrophotometer; scanning electron microscope; low temperature chamber; fatigue tester.

Current or Potential Work Performed for: self or parent company.

Nature of Work Performed for Others: testing and analysis.

Language(s) in Which Services are Provided: both english and french.

#### **CANADIAN RIG LTD.**

4281 - 23rd Street N.E., Calgary, Alberta, T2E 6Y2.

##### **Canadian Rig Ltd. (Canrig)**

Contact: John E. Gilbank, President, Tel: (408) 250-3812.

Personnel: Total is 10 of which 3 are scientists and engineers.

Activities: Canrig is involved in the design and development of oilfield drilling equipment using advanced technology control and operating systems. The company is currently developing an elective/hydraulic/slant drilling rig using a programmable logic controller which, if successful, will be the most automated drilling rig available in the world.

Facilities: Hewlett Packard Computer 9816.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.

Language(s) in Which Services are Provided: english.

#### **CANADIAN SEED COATERS LIMITED**

P.O. Box 219, Brampton, Ontario, L6V 2L2.

##### **Canadian Seed Coaters - North Battleford**

P.O. Box 1748, North Battleford, Saskatchewan, S9A 3W2.

Admin. Contact: Tony Cabral, General Manager,  
Tel: (306) 445-1077.

Scientific Contact: Mark George, Research Supervisor,  
Tel: (306) 445-1077.

Personnel: Total is 2 of which 2 are scientists and engineers.

Activities: Development of method and materials for coating seeds. Specializing in: coating materials and chemicals for canola seed; development of high

production equipment for coating canola seeds; new applications for seed coating technology. All above research carried out in both field and laboratory.

Facilities: Seed coater and driers.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: english.

#### **Canadian Seed Coaters Limited - Brampton, Ontario**

Box 219, Brampton, Ontario, L6V 2L2.

Contact: Trevor S. Bailie, General Manager,  
Tel: (416) 846-5080.

Personnel: Total is 1 of which 1 is a scientist or engineer.

Activities: Development of methods and materials for seed coating; Rhizobial research; field trials.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: english.

#### **CANBRO INC.**

29 East Park Street, Valleyfield, Québec, J6S 1P8.

##### **Research Unit**

Admin. Contact: L. Joncas, General Manager,  
Tel: (514) 373-0233.

Scientific Contact: R. Tremblay, Technical Support,  
Tel: (514) 373-0233.

Personnel: Total is 2 of which 1 is a scientist or engineer.

Activities: Development of new products and processes in metal powders (non-ferrous) - all R&D is for own use, no outside contracts.

Facilities: Particle size analyser; Classifiers; Grinding Equipment; Lab Furnaces.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: both english and french.

#### **CANEXEL HARDBOARD INC.**

P.O. Box 1020, Golf Course Road, Gatineau, Quebec, J8P 6K2.

##### **Research Unit**

Contact: H.W. Evans, Manager R&D, Tel: (613) 663-5331.

Personnel: Total is 4 of which 3 are scientists and engineers.

Activities: More efficient manufacture of hardboard products and more efficient use of those products in the field. Areas of specialization: hardboard manufacture, siding manufacture and installation. Development of new siding of interior panelling products.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: english.

#### **CANVIRO CONSULTANTS LTD**

178 Louisa Street, Kitchener, Ontario, N2H 5M5.

##### **Research Unit**

Contact: Dr. Earl Shannon, President, Tel: (519) 579-3500.

Personnel: Total is 5 of which 3 are scientists and engineers.

Activities: Anaerobic waste treatment (agricultural and industrial); hazardous waste treatment; residue reduction; biological waste treatment; organic analyses; computer assisted instruction; general environmental engineering; industrial waste treatment; resource, recovery, reuse and recycle.

Facilities: 2 Gas Chromatographs; high speed centrifuge; biological treatability units (aerobic and anaerobic); algal assay equipment, pilot plant equipment.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.

Language(s) in Which Services are Provided: english.

#### **CAPE BRETON DEVELOPMENT CORPORATION**

P.O. Box 2500, Victoria Junction, Cape Breton, Nova Scotia, B1P 6K9.

##### **Carbogel (Coal Water Slurry) Pilot Plant**

Admin. Contact: L. Adrian White, Director of Process Technology, Tel: (902) 564-2563.

Scientific Contact: Greg Landry, Process Engineer Manager, Tel: (902) 564-3857.

Personnel: Total is 19 of which 2 are scientists and engineers.

Activities: 4 tonne per hour pilot plant to grind, beneficiate, dewater and disperse coal to produce a stable slurry that can be stored, pumped and burned like residual fuel oil. Based on Swedish technology. Supplies demonstration quantities for combustion trials.

Facilities: Coulter Counter - (size analysis); Rheomat (viscosity measurement).

Current or Potential Work Performed for: self or parent company, government.

Nature of Work Performed for Others: contract R&D.

Language(s) in Which Services are Provided: english.

#### **CAPROCO CORROSION PREVENTION LTD**

5104-82 Avenue, Edmonton, Alberta, T6B 0E6.

##### **Caproco Research & Development Department**

6120-76 Avenue, Edmonton, Alberta, T6B 0A6.

Admin. Contact: F.W. Hewes, President,  
Tel: (403) 468-2878.

Scientific Contact: Dr. J.A. Jakobs, Manager, R&D Department, Tel: (403) 468-2878.

Personnel: Total is 5 of which 3 are scientists and engineers.

Activities: Field laboratory study, testing and evaluation of corrosion preventive methods, and corrosion resistant materials; corrosion mechanism studies for cause and effect; testing and evaluation of impressed current anodes; stray current and interference testing; field and laboratory testing and evaluation of coatings; pilot tests and rate studies to determine optimum inhibition; corrosivity of soil studies, testing and evaluation.

Facilities: Set-up for testing the performance of impressed current cathodic protection anodes; Test loops for evaluation of the corrosivity of fluids and for testing the corrosion resistance of materials.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.

Language(s) in Which Services are Provided: english.

#### **CARISTRAP INTERNATIONAL**

1760 boulevard Fortin, Laval, Québec, H7S 1N8.

##### **Research Unit**

Admin. Contact: Larry T. Karass, President,  
Tel: (514) 667-4700.

Scientific Contact: Thomas J. Karass, Chairman,  
Tel: (514) 667-4700.

Personnel: Total is 5 of which 2 are scientists and engineers.

Activities: Reinforcing paper; Reinforcing concrete;

Facilities: Full test laboratory.

Current or Potential Work Performed for: self or parent company.

Nature of Work Performed for Others: testing and analysis.

Language(s) in Which Services are Provided: english.

#### **CARTE ELECTRIC LTD**

1995 Logan Avenue, Winnipeg, Manitoba, R2R 0H8.

**Carte Electric Ltd, Research & Development Dept.**

Contact: James G. Cross, Director of R&D,

Tel: (204) 633-7220.

Personnel: Total is 5 of which 3 are scientists and engineers.

Activities: High voltage insulating materials; power systems equipment (transformers, fusing, oil-filled switchgear); high voltage phenomena; electrical insulating fluids; heat transfer (natural convection and radiation); 3-dimensional magnetic field numerical computation and plotting; applications of power electronics; short circuit effects on power system equipment; strength of materials.

Facilities: 600 KV impulse generator; 100 KV AC 60 Hz supply; partial discharge measuring equipment; 24 channel temperature recorder; infrared temperature sensor; 100 KV DC supply; IBM PC AT Computer; 3-D boundary element method numerical analysis software for 3-D Magnetic Field Plotting and force and inductance calculations.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: english.

#### **CASEY COPTER ACCESSORIES LTD**

511 Lepine, Dorval, Quebec, H9P 2S9.

**Casey Copter**

Admin. Contact: M.J. Casey, V.P., Tel: (514) 636-6155.

Scientific Contact: P. McCoughlin, Dir. Eng.,

Tel: (514) 636-6155.

Personnel: Total is 4 of which 2 are scientists and engineers.

Activities: Aircraft heating and air conditioning system development. Speed controls for DC motors.

Current or Potential Work Performed for: self or parent company, other clients.

Nature of Work Performed for Others: contract R&D.

Language(s) in Which Services are Provided: english.

#### **CATTLELAND FEEDYARDS LTD.**

P.O. Box 1660, Airdrie, Alberta, T0M 0B0.

**Animal Research International (Div Cattleland Feedyards Ltd)**

Admin. Contact: D. John Price, D.U.M, D.U.P.M., General Manager, Tel: (403) 948-7155.

Scientific Contact: Ben E. Thorlakson, President,

Tel: (403) 948-7155.

Personnel: Total is 4 of which 1 is a scientist or engineer.

Activities: Ruminant nutrition; efficacy of growth promotants, feed additives and animal health products for cattle.

Facilities: Research Feedlot (Cattle) (48 pens).

Current or Potential Work Performed for: self or parent company, other clients.

Nature of Work Performed for Others: contract R&D.

Language(s) in Which Services are Provided: english.

#### **CAULFIELD ENGINEERING**

193 East White Crost, 232 Range Road, Sherwood Park, Alberta, T8B 1B7.

**Research Unit**

P.O. Box 607, 2003 5th Street, Nisku, Alberta, T0C 2G0.

Admin. Contact: Chris Robinson, General Manager,

Tel: (403) 995-7290.

Scientific Contact: David Caulfield, President,

Tel: (403) 955-7290.

Personnel: Total is 22 of which 15 are scientists and engineers.

Activities: Sonar Technology Development - acoustic signal processing software/hardware; stereo side scan; correlation sonar; sub-bottom analysis system; Process Control - Ingot Quality Control; Nondestructive Testing; Monitoring Systems and Software.

Facilities: CE 7000, 8000 computer series; monitoring equipment; sound sources.

Current or Potential Work Performed for: self or parent company, other clients.

Nature of Work Performed for Others: contract R&D, testing and analysis.

Language(s) in Which Services are Provided: english.

#### **CEDARLANE LABORATORIES LIMITED**

5516-8th Line, RR #2, Hornby, Ontario, L0P 1E0.

**Research Unit**

Contact: C. Greer, Director, Tel: (416) 878-7800.

Personnel: Total is 2 of which 2 are scientists and engineers.

Activities: Hybridoma technology - primarily monoclonal antibodies to mouse cell surface ags.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: english.

#### **CENTRAL DYNAMICS LTD**

147 Hymus Boulevard, Pointe-Claire, Québec, H9R 1G1.

**Research Unit**

Admin. Contact: Peter O. Brackett, President,

Tel: (514) 697-0810.

Scientific Contact: Roger Bradley, Director of Engineering,

Tel: (514) 697-0810.

Personnel: Total is 20 of which 10 are scientists and engineers.

Activities: Research and development of products for the wide bandwidth (eg. television and data) switching business. Analog and digital circuit design and development. Real time microprocessor software design and development.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: both english and french.

#### **CENTRODYNE INC**

3485 Thimens Blvd, Montreal, Quebec, H4R 1V5.

**Research Unit**

Admin. Contact: Tony Lee, Executive Vice-President,

Tel: (514) 331-8760.

Scientific Contact: Jack Steiner, Vice-President,

Tel: (514) 331-8760.

Personnel: Total is 6 of which 3 are scientists and engineers.

Activities: Digital/computer systems for transportation; developing in-house products using the latest electronic technology to monitor driver/vehicle performance.

Facilities: Schaffner interference generator for automotive electronics.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: english.

#### **CETEC ENGINEERING CO. INC.**

301 Discovery Park, 3700 Gilmore Way, Burnaby, British Columbia, V5G 4M1.

**Research Unit**

Admin. Contact: H.W. Bray, Administration Manager,

Tel: (604) 434-3166.

Scientific Contact: J. Brdicko, Research Director,  
Tel: (604) 434-3166.  
Personnel: Total is 20 of which 12 are scientists and engineers.  
Activities: Sawmill Machinery and Processes; Linear Induction Motors; High Frequency Invertors; Sonic Vibrational Equipment for Grinding, Leaching, etc.  
Facilities: Electronic Test Equipment; High Power Sonic Vibrators.  
Current or Potential Work Performed for: self or parent company.  
Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.  
Language(s) in Which Services are Provided: english.

## CH2M HILL ENGINEERING

1110 Centre Street North, Calgary, Alberta, T2E 2R2.

### Research Unit

Contact: C.W. Fulton, Bus. Development Co-ord.  
Personnel: Total is 53 of which 28 are scientists and engineers.  
Activities: Advanced Water and Wastewater Treatment: CH2M HILL provides engineering consultation in the field of Advanced Water and Wastewater Treatment technology. Their services have been provided to cities, rural utilities, and industries. Actively involved in the field for 35 years, CH2M HILL's services have been oriented toward improving methods and technologies for Advanced Water and Wastewater Treatment facilities planning, design, and construction management.  
Current or Potential Work Performed for: other clients.  
Nature of Work Performed for Others: consultation.  
Language(s) in Which Services are Provided: english.

## CHAMPION ROAD MACHINERY LIMITED

P.O. Box 10, Maitland Road, Goderich, Ontario, N7A 3Y6.

### Champion Road Machinery Engineering Department

Huckins Street, Goderich, Ontario, N7A 1V8.  
Contact: T. Powell, Chief Engineer, Tel: (519) 524-2601.  
Personnel: Total is 35 of which 10 are scientists and engineers.  
Activities: Development work on mobile equipment and drive lines; development work on gear boxes and vehicle transmissions.  
Facilities: CAD/CAM System; Finite Element Analysis; Experimental Stress Analysis; Hydraulic System Development; Drive Line Dynamometer; Electronic Data Acquisition.  
Current or Potential Work Performed for: self or parent company, other clients.  
Nature of Work Performed for Others: testing and analysis.  
Language(s) in Which Services are Provided: english.

## CHAMPLAIN INDUSTRIES LTD

176 Rue Principale, Stanbridge Station, Québec, J0J 2J0.

### Champlain Industries Technical Centre

Admin. Contact: D. Van Horn, Operations Manager,  
Tel: (514) 248-3376.  
Scientific Contact: David Thomson, Product Development Scientist, Tel: (514) 248-3376.  
Personnel: Total is 2 of which 2 are scientists and engineers.  
Activities: Savoury flavours - development of new flavours based on hydrolysed plant proteins, yeast extracts. Dried food ingredients - spray dried ingredients based on milk, fat, whey, casein. Peptones - enzyme hydrolysed proteins for application in microbiological media and nutritional supplements.  
Facilities: Pilot spray dryer; 10 gallon pilot glass lined pressure reactors (2); homogenising pump.

Current or Potential Work Performed for: self or parent company.  
Language(s) in Which Services are Provided: both english and french.

## CHARLAN DEVELOPMENTS LIMITED

39 Main Street, Vankleek Hill, Ontario, K0B 1R0.

### Research Unit

Contact: Colin C. Kerr, President, Tel: (613) 678-2438.  
Personnel: Total is 2 of which 1 is a scientist or engineer.  
Activities: Renewable energy - wind and solar; Communications - mechanical reproduction of non-latin written languages, security systems; Aerospace - ultra heavy lift; Metallurgy - extraction of elements from solutions.  
Facilities: Wind energy R&D test apparatus.  
Current or Potential Work Performed for: self or parent company, other clients.  
Nature of Work Performed for Others: contract R&D.  
Language(s) in Which Services are Provided: english.

## CHEMBIOMED LTD

16th Floor, 11145 87th Avenue, Campus Tower, Edmonton, Alberta, T6G 0Y1.

### Biotechnology R&D

Admin. Contact: Dr. H.R. Hutchings, President and Chief Executive Officer, Tel: (403) 432-2053.  
Scientific Contact: Dr. R.M. Ratcliffe, Director - Carbohydrate Chemistry, Tel: (403) 432-2053.  
Personnel: Total is 13 of which 11 are scientists and engineers.  
Activities: Chembimed is in the business of researching, developing and commercializing products for human health care and industrial use by the application of biotechnology - particularly those aspects of biotechnology which relate to carbohydrate chemistry. In this respect, Chembimed is presently involved in the R&D of Monoclonal antibodies to cell surface antigens of carbohydrate nature.  
Facilities: Carbohydrate synthesis small pilot plant; hybridoma laboratory; cell culture laboratory; animal (mice) facility.  
Current or Potential Work Performed for: self or parent company.  
Language(s) in Which Services are Provided: english.

## CHEMCRAFT SADOLIN INC

155 Rose Glen Road, P.O. Box 458, Port Hope, Ontario, L1A 3Z3.

### Research Unit

Admin. Contact: David Rogers, Controller,  
Tel: (416) 885-6388.  
Scientific Contact: Lissi Jeppesen, Technical Director,  
Tel: (416) 885-6388.  
Personnel: Total is 10 of which 5 are scientists and engineers.  
Activities: Research and development of coating materials, especially in regard to coating of wood, furniture, panelboard and construction wood. Preservation and recondition of concrete constructions exposed to airborne acid. Preservation of wood; construction wood, logs, sawn timber.  
Current or Potential Work Performed for: self or parent company, other clients.  
Nature of Work Performed for Others: testing and analysis.  
Language(s) in Which Services are Provided: english.

**CHEMLAB INC**

27 Clyde Street, Saint John, New Brunswick, E2L 4H8.

**Research Unit**

Admin. Contact: W.J. Wilson, President,

Tel: (506) 634-1771.

Scientific Contact: A. Feicht, Analytical Coordinator,

Tel: (506) 642-1117.

Personnel: Total is 6 of which 5 are scientists and engineers.

Activities: Contract research and development generally dealing with product formulation or process development. The products we have developed vary from soap and detergent formulation to food products like flavour drink crystals, hot chocolate mixes and a pancake powder mix. For the industrial market, products such as an activated carbon and a catalyst package for chlorine dioxide regeneration have been developed. We have investigated processes for descaling industrial evaporators, silver recovery from industrial waste and recovery of metals from ores.

Facilities: Gas chromatograph; atomic absorption spectrophotometer; infrared spectrophotometer; nitrogen analyzer; x-ray fluorescence spectrophotometer.

Current or Potential Work Performed for: self or parent company, other clients.

Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.

Language(s) in Which Services are Provided: english.

**CHIPMAN**

400 Jones Road, Stoney Creek, Ontario, L8G 3Z1.

**Technical Department**

Contact: R.A. Costen, Technical Manager,

Tel: (416) 643-4123.

Personnel: Total is 15 of which 13 are scientists and engineers.

Activities: Development and evaluation of new pesticides.

Facilities: Laboratory analytical equipment; field sprayers - all types; field machinery.

Current or Potential Work Performed for: self or parent company.

Nature of Work Performed for Others: testing and analysis.

Language(s) in Which Services are Provided: both english and french.

**CHORLEY & BISSET LTD CONSULTING ENGINEERS**

521 Colborne Street, London, Ontario, N6B 2T6.

**Research Unit**

Contact: Peter J. Golem, P. Eng., Tel: (519) 679-8660.

Personnel: Total is 3 of which 3 are scientists and engineers.

Activities: Chorley & Bisset Ltd. is a consulting engineering firm mainly involved in the field of mechanical and electrical systems for commercial/institutional buildings. A specialization is in energy management of buildings. Our research activities have been in parallel areas. All our research has been on a contract basis with clients and has included: computer modelling studies; review and analysis of existing literature; documentation and analysis of existing technical methods. Our research clients have included various government departments and a major utility company.

Current or Potential Work Performed for: government, other clients.

Nature of Work Performed for Others: contract R&D, consultation.

Language(s) in Which Services are Provided: english.

**CHROMASCO, A DIVISION OF TIMMINCO LTD**

2900-130 Adelaide Street West, Toronto, Ontario, M5H 3P5.

**Research Unit**

Haley, Ontario, K0J 1Y0.

Contact: Dr. D.J. Zuliani, Director-R&D,

Tel: (613) 432-3621.

Personnel: Total is 4 of which 3 are scientists and engineers.

Activities: Chromasco is a producer of magnesium, calcium and strontium metals by high temperature vacuum reduction and ferroalloys by submerged arc electric furnace. Our R&D is directed towards developing new and improving existing products and processes. We accomplish this with a limited staff by assigning R&D projects to many of the technical personnel employed throughout the company. These engineers spearhead projects by using internal services, university labs, research Foundations and consultants. The R&D department assigns, co-ordinates and budgets the project portfolio. The department is constructing and will operate a pilot high temperature vacuum reduction facility for specialized process and product development. Chromasco supplies products to a diverse market place including: magnesium alloys to die & sand casters, extrusions, reagent and alloys for the ferrous, aluminum and lead industries, magnesium alloys for nuclear and reduction applications. To ensure effective product development, we retain technical staff with expertise in these product areas.

Facilities: Vacuum reduction pilot facility.

Current or Potential Work Performed for: self or parent company.

Nature of Work Performed for Others: testing and analysis.

Language(s) in Which Services are Provided: english.

**CIDROBEC**

C.P. 40, R.N. 1, Rougemont, Québec, J0L 1M0.

**Research Unit**

Contact: Raymond Dehaut, Directeur Technique,

Tel: (514) 861-2404.

Personnel: Total is 2 of which 2 are scientists and engineers.

Activities: We conduct R&D solely to develop new products, improve our manufacturing processes, and almost exclusively in our field. We specialize only in wine, cider and spirits production.

Facilities: Zahn pilot plant.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: french.

Note: Descriptive text has been translated from French.

**CIL PAINTS INC**

1330 Castlefield Avenue, Toronto, Ontario, M6B 4B3.

**Paint Research Laboratory**

Contact: Dr. Ian H. McEwan, Research Manager,

Tel: (416) 787-2411.

Personnel: Total is 69 of which 30 are scientists and engineers.

Activities: Polymer chemistry, colloid science, color physics; analytical chemistry; coating and resin development; synthesis of intermediates.

Facilities: Instrumental color matching; laser light scattering particle sizing; HPLC.

Current or Potential Work Performed for: self or parent company, other clients.

Nature of Work Performed for Others: testing and analysis.

Language(s) in Which Services are Provided: english.

**CIMTECH, DIVISION OF BATA INDUSTRIES LIMITED**  
P.O. Box 608, 400 Sidney Street, Trenton, Ontario,  
K8V 2V2.

**Cimtech**

Admin. Contact: Mr. Wald Schilke, General Manager,  
Tel: (613) 394-4801.

Scientific Contact: Dr. Douglas Strong, Director of  
Research, Tel: (613) 394-4871.

Personnel: Total is 25 of which 15 are scientists and  
engineers.

Activities: Principally development of technology and  
machinery for shoe manufacturing and related industries.  
Includes C.A.D. design package for 3-D objects  
(footwear) with flattening capability. Interface for N.C.  
mouldmaking, and N.C. cutting (laser, water jet and  
machine centre) of components. Development of control  
systems for high accuracy and high speed X-Y tables  
(water-jet, stitchers) and robotics. Research on  
light-weight carbon fiber composite structures and low  
inertia, fast response, zero-back lashdrive systems.

Facilities: Vax 750 computers (3) graphics design  
program; intel computer with ICE in circuit emulator;  
laser cutter, water-jet cutters; automatic 3-D digitizer;  
recording oscilloscopes; control systems test equipment.  
CADMUS 9000, Computer Vision 3000 (sun) - on loan,  
taking delivery of MicroVax 11 in Aug. 1985.

Current or Potential Work Performed for: self or parent  
company.

Language(s) in Which Services are Provided: english.

**CIP INC.**

1155 Metcalfe Street, Montréal, Québec, H3B 2X1.

**CIP Research Ltd.**

179 Main Street West, Hawkesbury, Ontario, K6A 2H4.

Contact: W.R. Saxton, President, Tel: (613) 632-4121.

Personnel: Total is 60 of which 20 are scientists and  
engineers.

Activities: Research and development relating to the  
manufacture of newsprint, packaging board, market  
pulp and tissue products. Specializing in field of  
mechanical and chemical pulping, bleaching and paper  
machine diagnostics.

Facilities: 10 tons/day Pulping Pilot Plant.

Current or Potential Work Performed for: self or parent  
company, government, other clients.

Nature of Work Performed for Others: contract R&D,  
consultation, testing and analysis.

Language(s) in Which Services are Provided: both english  
and french.

**CIP Packaging Research**

15300 Sherbrooke Street East, Montréal, Québec, H1A 3S1.

Admin. Contact: J.W. McEwan, Manager,  
Tel: (514) 878-4952.

Scientific Contact: Serge Koutitonsky, Senior Dev.

Chemist, Tel: (514) 642-9243.

Personnel: Total is 11 of which 4 are scientists and  
engineers.

Activities: Research and development relating to the  
manufacture of corrugated packaging, multiwall bags and  
extrusion coating. Specializing in functional surface  
coating and package development.

Facilities: Extrusion coating pilot plant.

Current or Potential Work Performed for: self or parent  
company.

Language(s) in Which Services are Provided: both english  
and french.

**Dominion Cellulose Technical Dept., Facelle**

1551 Weston Road, Toronto, Ontario, M6M 4Y4.

Contact: Ivan Pivko, Technical Director,  
Tel: (416) 243-3011.

Personnel: Total is 3 of which 2 are scientists and

engineers.

Activities: Applied tissue research.

Current or Potential Work Performed for: self or parent  
company.

Language(s) in Which Services are Provided: english.

**CIRCUL-AIRE INC.**

3999 Cote Vertu, St Laurent, Québec, H4R 1R2.

**Circul-Aire Inc., R&D Department**

5885 Henri Bourassa West, Montréal, Québec, H4R 1B7.

Contact: Dr. Bhuvan C. Pant, Vice-President R&D,  
Tel: (514) 336-3330.

Personnel: Total is 3 of which 3 are scientists and  
engineers.

Activities: Development of new matrices and impregnates  
for the abatement of corrosive, odorous, and toxic gases;  
research and development in the field of analytical  
methodologies for corrosive, odorous, and toxic gases;  
research and development in the field of corrosion  
monitoring and relative odor response evaluations.

Facilities: Contaminant monitors; Corrosion monitoring  
equipment set-up; Relative odor response evaluation  
equipment set-up.

Current or Potential Work Performed for: self or parent  
company, government, other clients.

Nature of Work Performed for Others: contract R&D,  
consultation, testing and analysis.

Language(s) in Which Services are Provided: english.

**Circul-Aire Inc., Technical Services Department**

Contact: Mark A. Huza, V.P. Operations,

Tel: (514) 336-3330.

Personnel: Total is 2 of which 1 is a scientist or  
engineer.

Activities: Development of advanced Environment Control  
Systems to provide protection from corrosion for  
installed electrical and electronic process control  
equipment. Fields of specialization include air quality  
control, HVAC design, electrical/electronic system  
design, clean room design, control instrumentation.

Facilities: h2s - so2 Gas Analyzer

Current or Potential Work Performed for: self or parent  
company, other clients.

Nature of Work Performed for Others: consultation,  
testing and analysis.

Language(s) in Which Services are Provided: english.

**CITY OF CALGARY ENGINEERING DEPT.**

P.O. Box 2100, Calgary, Alberta, T2P 2M5.

**City of Calgary/Eng Dept/Strs Div/Paving & Sidewalk  
Section, Materials Research**

Contact: Mr. C.E. Rodier, Materials & Research Engineer,  
Tel: (403) 268-5016.

Personnel: Total is 6 of which 2 are scientists and  
engineers.

Activities: Additive products for asphalt; additive products  
for concrete.

Current or Potential Work Performed for: self or parent  
company.

Language(s) in Which Services are Provided: english.

**Glenmore Waterworks Laboratory**

Admin. Contact: Dr. R.T. Seidner, Lab Supervisor,  
Tel: (403) 243-9808.

Scientific Contact: Dr. E.E. Hargesheimer, Research  
Chemist, Tel: (403) 243-0073.

Personnel: Total is 7 of which 3 are scientists and  
engineers.

Activities: Water treatment methods: ozone as preoxidant  
and pilot filtration plant. Water quality monitoring and  
assessment; continuous monitoring methods,  
biomonitoring, eutrophication studies.

Facilities: Mass spectrometer - data system; gas chromatograph; atomic absorption spectrophotometer; ion chromatograph; fluorescence spectrophotometer.  
 Current or Potential Work Performed for: self or parent company.  
 Nature of Work Performed for Others: testing and analysis.  
 Language(s) in Which Services are Provided: english.

#### CLARE BROTHERS

223 King Street, Cambridge, Ontario, N3H 4T5.

##### Research Unit

Admin. Contact: David Godfrey, Exec. Vice-President, Tel: (519) 653-6245.  
 Scientific Contact: David Taggart, Manager of Engineering, Tel: (519) 653-6245.  
 Personnel: Total is 10 of which 4 are scientists and engineers.  
 Activities: Related to development of Residential/Commercial Heating/ Cooling and Environmental Systems.  
 Current or Potential Work Performed for: self or parent company, government.  
 Nature of Work Performed for Others: contract R&D.  
 Language(s) in Which Services are Provided: english.

#### CMA CHALIFOUR, MARCOTTE & ASSOC. INC.

83 Place Frontenac, Pointe-Claire, Québec, H9R 4Z7.

##### Research Unit

Admin. Contact: Guy M. Dubois, Associé-Directeur, Tel: (514) 694-4141.  
 Scientific Contact: André Chalifour, Associé-Président, Tel: (514) 694-4141.  
 Personnel: Total is 8 of which 6 are scientists and engineers.  
 Activities: R&D on: the use of heat pumps in industrial processes; new and renewable sources of energy; the use of biomass for cogeneration procedures; software for energy management in industry; software for energy management of residential complexes; the application of electrotechnologies in industrial processes; optimization of various sources of energy in all fields; rational use of all forms of energy.  
 Current or Potential Work Performed for: self or parent company, government, other clients.  
 Nature of Work Performed for Others: contract R&D, consultation.  
 Language(s) in Which Services are Provided: both english and french.  
 Note: Descriptive text has been translated from French.

#### COAL MINING RESEARCH COMPANY

P.O. Bag 1400, One Oil Patch Drive, Devon, Alberta, T0C 1E0.

##### Coal Mining Research Centre

Admin. Contact: Paul M.T. White, Manager Office Services, Tel: (403) 987-8195.  
 Scientific Contact: Stanley G. Butcher, President, Tel: (403) 987-8271.  
 Personnel: Total is 18 of which 14 are scientists and engineers.  
 Activities: The Mining Technology Division carries out research related to coal exploration, surface coal mining methods and economics, reclamation, underground mining methods and economics, strata control, health and safety and underground environmental control. The Coal Preparation Division carries out research related to upgrading and beneficiation of coal by coal drying, dry cleaning, alternative coal washing methods, waste disposal and utilization, plant control.

Facilities: 4500 kN testing machine; triaxial test apparatus; 1 tonne/hour Roto-Louvre Dryer; Mogensen screen and sizer.

Current or Potential Work Performed for: government, other clients.

Nature of Work Performed for Others: contract R&D.

Language(s) in Which Services are Provided: english.

#### COGEBEC INC.

Suite 450, 4 Place du Commerce, Verdun, Québec, H3E 1J4.

##### Pro-tek et Cour Municipale

Admin. Contact: Francine Dion, Adjointe Administrative, Tel: (514) 768-1196.  
 Scientific Contact: Sylvain Hébert, Directeur de Projet, Tel: (514) 768-1196.  
 Personnel: Total is 10 of which 5 are scientists and engineers.  
 Activities: Pro-tek: Integrated police data management system. The system includes two main functions of police station administration: - Computer-aided dispatch including Geobase, Personnel, Deployment and Initial Service Requests (computer-aided dispatch) modules. - Incident reports, a valuable aid for investigators, providing a mass of pertinent data instantly, including all required reports (can be displayed on screen).  
 Municipal Court: the function of the municipal court computerized management system is to help control traffic tickets, court session timetables, and all municipal court-related accounting.  
 Facilities: Wang VS computer; Stratus.  
 Current or Potential Work Performed for: government.  
 Language(s) in Which Services are Provided: both english and french.  
 Note: Descriptive text has been translated from French.

#### COGNOS INCORPORATED

3755 Riverside Drive, Ottawa, Ontario, K1G 3N3.

##### Research Unit

Admin. Contact: Kenneth M. Aalders, Manager, Planning and Quality, Tel: (613) 738-1440.  
 Scientific Contact: Rick Soderstrom, Vice President, Tel: (613) 237-1440.  
 Personnel: Total is 130 of which 100 are scientists and engineers.  
 Activities: Computer Software Products: Fourth Generation Languages; Productivity tools for DP development; End Users Productivity tools; Expert systems; Fifth Generation System Development Languages; Decision Support Tools.  
 Facilities: Data Communication Networks; Micro Computers; Graphics equipment.  
 Current or Potential Work Performed for: self or parent company, government, other clients.  
 Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.  
 Language(s) in Which Services are Provided: english.

#### COMCHEQ SERVICES LIMITED

298 Garry Street, Winnipeg, Manitoba, R3C 1H3.

##### R&D Department

Admin. Contact: R.D. Gurevich, Director of Research & Development, Tel: (204) 947-9400.  
 Scientific Contact: Ray Senez, , Tel: (204) 947-9400.  
 Personnel: Total is 6 of which 5 are scientists and engineers.  
 Activities: Comcheq has developed information collection and processing systems for its own use and is marketing these systems and their expertise. Systems developed include: A system which allows a microcomputer to collect data over the telephone. This unit will accept

dialled digits and respond with speech. It is currently being used in a home banking system and a payroll data entry system; A low cost terminal network used for factory time collection and on-line production information, currently installed in four locations; A preprocessor which allows microcomputers to interactively process data from dumb terminals using the Datapac network. This unit can accommodate up to 8 datapac lines per microcomputer. It is currently being used in an information collection and retrieval system; A transaction processing system based on networked microcomputers. By distributing the workload over a number of microcomputers, a low cost high throughput system is achieved. This software is currently being used in a home banking system, a financial account management system, and an information collection and retrieval system.

Facilities: LAN TEST BED; Protocol Analyzer; Speech Digitizer.

Current or Potential Work Performed for: self or parent company, other clients.

Language(s) in Which Services are Provided: both english and french.

## COMINCO LTD

200 Granville St., Vancouver, B.C., V6C 2R2.

### Technical Research Centre - Cominco Ltd

Trail, B.C., V1R 4L8.

Contact: C.A. Sutherland, General Manager, Research & Development, Tel: (604) 364-4426.

Personnel: Total is 47 of which 23 are scientists and engineers.

Activities: Mineral beneficiation - specializing in lead, zinc, and copper; Metallurgical Research - hydrometallurgical (zinc and copper, arsenic); - pyrometallurgical (lead, zinc, silver, arsenic, antimony; general chemical processes; electrolytic research - electrowinning of zinc, lead refining; process control.

Facilities: Research laboratories; pilot plant facilities; special analytic equipment (SEM etc.); process modeling by computer.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation.

Language(s) in Which Services are Provided: english.

### Trail Operations Development, Cominco Ltd

Trail, B.C., V1R 4L8.

Contact: C.A. Sutherland, General Manager, Research & Development, Tel: (604) 364-4426.

Personnel: Total is 48 of which 23 are scientists and engineers.

Activities: Process improvements for zinc and lead production operations; pilot plant operation for process revisions; process improvements for fertilizer production plants; general plant troubleshooting.

Facilities: Testing laboratories and offices.

Current or Potential Work Performed for: self or parent company, other clients.

Nature of Work Performed for Others: consultation, testing and analysis.

Language(s) in Which Services are Provided: english.

### Electronic Materials Development

Semiconductor Plant #2, Trail, British Columbia, V1R 4L8.

Admin. Contact: A.G. White, General Manager, Electronic Materials Division, Tel: (604) 364-4758.

Scientific Contact: R.F. Redden, Development Manager, Tel: (604) 364-4751.

Personnel: Total is 20 of which 11 are scientists and engineers.

Activities: Single crystal LEC GA-AS wafers - undoped and chrome and silicon doped; Single crystal CD-TE wafers - N AND P type; Epitaxial CD-HG-TE layers; Ultra high purity CD, TE, AS, GA, and B2O3; Specialty arsenic products AS2O3 - AS2O5 - metallic MBE slugs; Single crystal GE wafers - poly GE blanks - GE-CL4, GE-O2.

Facilities: Melbourne high pressure crystal growers; semiconductor wafer fabrication; zone refining; semiconductor characterization.

Current or Potential Work Performed for: self or parent company, government.

Nature of Work Performed for Others: contract R&D.

Language(s) in Which Services are Provided: english.

### Product Research Centre

2380 Speakman, Sheridan Park, Mississauga, Ontario, L5K 1B4.

Contact: G.P. Lewis, Manager, Product Research, Tel: (416) 822-2022.

Personnel: Total is 31 of which 14 are scientists and engineers.

Activities: Continuous strip casting and rotary strip expansion technology for production of lead-acid battery grids; Electrochemistry, physical metallurgy and corrosion behaviour of lead-acid battery components, particularly lead-alloy grid materials and active material, as affected by manufacturing process variables and battery cycling regimes; Superplastic zinc alloy thermoforming technology; Superplastic zinc alloys for compression forging applications; Zinc-alkaline batteries; Continuous cast zinc alloy bearing stock; Hot-dip galvanizing technology; Machinability of alloys, especially zinc based alloys; Computer assisted die design for zinc pressure die castings.

Facilities: Computer controlled battery cycling facilities; cominco lead alloy strip caster and expander for battery grid manufacture; metallography lab including SEM and EDX capability; pilot hot-dip galvanizing line; machinability evaluation capability; non-ferrous metal casting facilities; B.E.T. particle size apparatus; broad range of materials testing and characterization facilities.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.

Language(s) in Which Services are Provided: english.

### Cominco Ltd - Calgary Fertilizer Operations

Box 5370, Station A, Calgary, Alberta, T2H 2P4.

Admin. Contact: M.E. Agg, Operating Superintendent, Tel: (403) 255-8841.

Scientific Contact: B.M. Picone, Process Engineer, Tel: (403) 255-8843.

Personnel: Total is 3 of which 2 are scientists and engineers.

Activities: To improve the production of the following products: ammonia, ammonium-nitrate, urea-sulphur.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: english.

### Research & Technical Development, Sullivan Mine

P.O. Box 2000, Kimberley, B.C., V1A 2G3.

Contact: M.B. Bapty, P.Eng., Superintendent, Technical Development, Tel: (604) 427-2884.

Personnel: Total is 6 of which 6 are scientists and engineers.

Activities: Applied research in mining methods and systems technology, ground control, environmental control, explosives technology, fire resistant fluid hydraulics, sulfide fires, pneumatic backfill stowing, ground support systems, mining machinery and equipment development, remote control systems for

vehicles, radio, corrosion control. Represents Cominco on the board of the Mining Industry Research Organization of Canada. Represents Cominco on the Canadian Standards Association Steering Committee on Electrical and Mechanical Mine Safety.

Facilities: Two laboratories: Sullivan mine explosives laboratory: field testing facilities for explosives (used sometimes by CANMET and DND); Technical development research laboratory.

Current or Potential Work Performed for: self or parent company, government.

Language(s) in Which Services are Provided: english.

#### **Technical Development, Sullivan Concentrator**

P.O. Box 2000, Kimberley, B.C., V1A 2G3.

Admin. Contact: J.T. Furey, Development Superintendent, Tel: (604) 427-4470.

Scientific Contact: J.T. Furey, Development Superintendent, Tel: (604) 427-4470.

Personnel: Total is 11 of which 4 are scientists and engineers.

Activities: Beneficiation of sulphide, oxide and precious metal ores. Applied research on concentrator operation and control.

Facilities: Mineral processing laboratory; column flotation cell.

Current or Potential Work Performed for: self or parent company, other clients.

Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.

Language(s) in Which Services are Provided: english.

#### **Development, Kimberley Fertilizer Operations**

P.O. Box 2000, Kimberley, B.C., V1A 2G3.

Admin. Contact: W.L. Davies, Fertilizer Operations Manager, Tel: (604) 427-3993.

Scientific Contact: G.W. Johnson, Senior Development Engineer, Tel: (604) 427-3630.

Personnel: Total is 3 of which 1 is a scientist or engineer.

Activities: Plant testing and troubleshooting for phosphate fertilizer production.

Facilities: Testing laboratories.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: english.

#### **COMMERCIAL ELECTRONICS LTD**

1335 Burrard Street, Vancouver, B.C., V6Z 1Z7.

##### **Research Unit**

Admin. Contact: Gwendoline Turpin, Secretary, Tel: (604) 669-5525.

Scientific Contact: H.H. von Tiesenhausen, President, Tel: (604) 669-5525.

Personnel: Total is 7 of which 5 are scientists and engineers.

Activities: Audio and multi-media control system involving micro-computer and micro-processor technologies.

Facilities: Various development systems.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation.

Language(s) in Which Services are Provided: english.

#### **COMMONWEALTH GEOPHYSICAL DEVELOPMENT COMPANY LTD**

#902, 441-5 Avenue S.W., Calgary, Alberta, T2P 2V1.

##### **Research Unit**

Contact: Dr. Sudhir Jain, President, Tel: (403) 233-0336.

Personnel: Total is 1 of which 1 is a scientist or engineer.

Activities: Geophysical processing and interpretation techniques related especially to oil exploration.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: english.

#### **COMMUNICATIONS VIDEOTRON LTEE (LES)**

2000 rue Berri, Montréal, Québec, H2L 2V7.

##### **Research Unit**

Admin. Contact: Jean Charles Dagenais, Président, Tel: (514) 281-8881.

Scientific Contact: Norman Rochon, Directeur du développement, Tel: (514) 281-8803.

Personnel: Total is 22 of which 3 are scientists and engineers.

Activities: Carries out research and development projects in communications technology; Cable networks engineering: project on electrical, mechanical, and electronic reliability of networks; Cable television and telematics: projects on bidirectional development of networks and hybridization of these networks; software development project; development of software for network operations and for the integration of the information, telecommunications and subscription management systems; computerized subscription management systems; computerization of business communications; integration of information systems and digital cable television systems (Videotron); Project on the development of international markets and new services in cable television and telematics.

Facilities: Sperry 1100/72 computer; PDP 11/70 computer; PDP 11/24,34,44 mini-computers; micro-computers (Apple, IBM, PC and others).

Current or Potential Work Performed for: self or parent company.

Nature of Work Performed for Others: contract R&D, consultation.

Language(s) in Which Services are Provided: french.

Note: Descriptive text has been translated from French.

#### **COMPAGNIE DE RECHERCHE CONTRACTUELLE CORECO INC (LA)**

555 St-Thomas, Longueuil, Québec, J4H 3A7.

##### **Coreco Inc**

Contact: Daniel Crevier, Président, Tel: (514) 651-2919.

Personnel: Total is 10 of which 6 are scientists and engineers.

Activities: Development of computer interfaces for robotic vision, development and programming of robotic vision systems; and industrial applications of computer vision.

Facilities: Kontron functional analysis system.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation.

Language(s) in Which Services are Provided: both english and french.

Note: Descriptive text has been translated from French.

#### **COMPAIR CANADA INC.**

2185 North Sheridan Way, Mississauga, Ontario, L5K 1A4.

##### **Research Unit**

Contact: R. Green, V.P. R&D, Tel: (416) 822-7350.

Personnel: Total is 4 of which 1 is a scientist or engineer.

Activities: Oil flooded and dry rotary screw compressors to 200 h.p. Dry rotary screw to present maximum 150 h.p. Both of these to be R&D to greater h.p.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: english.

#### **COMPENG COMPUTER SYSTEMS LTD**

Suite 217, 39 Robertson Road, Nepean, Ontario, K2H 8R2.

##### **Research Unit**

Admin. Contact: W.M. Harding, Vice President,  
Tel: (613) 820-6438.

Scientific Contact: Shawn Gibbons, Water Resources  
Engineer, Tel: (613) 820-6438.

Personnel: Total is 3 of which 3 are scientists and engineers.

Activities: All applications for Civil Engineering with specialization on water resources.

Facilities: H.P. A 600 Computer; I.B.M. P.C. XT Computer; H.P. 9816 Computer.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: consultation.

Language(s) in Which Services are Provided: both english and french.

#### **COMPOSTS DU QUEBEC INC. (LES)**

415 chemin Plaisance, St-Henri Cte. Levis, Québec, G0R 3E0.

##### **Research Unit**

Admin. Contact: Roch Buteau, Président,  
Tel: (819) 882-2737.

Scientific Contact: Denis Potvin, Agronome,  
Tel: (819) 882-2736.

Personnel: Total is 3 of which 1 is a scientist or engineer.

Activities: Research and development on composts and compost-based soil-less culture substrata; technical development of physical and chemical quality control methods for composts; improvements in the production methods for sawdust-based and liquid hog manure-based composts; research on new products or wastes rich in carbon, which could be used for the production of composts; compost and composting data bank.

Current or Potential Work Performed for: self or parent company, other clients.

Nature of Work Performed for Others: consultation, testing and analysis.

Language(s) in Which Services are Provided: french.

Note: Descriptive text has been translated from French.

#### **COMPUTECH CONSULTING CANADA LTD**

1009 - 1177 West Hastings, Vancouver, British Columbia, V6E 2K3.

##### **Research Unit**

Contact: R. Birch, Vice President, Tel: (604) 688-1371.

Personnel: Total is 80 of which 70 are scientists and engineers.

Activities: Development of better techniques for applications development of computer systems with particular attention to development methodologies and development tools.

Facilities: VAX730; Terminals to IBM MVS System; Various IBM Compatible Microcomputers.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.

Language(s) in Which Services are Provided: english.

#### **COMPUTER GATEWAYS INC**

Suite 703, 331 Cooper Street, Ottawa, Ontario, K2P 0G5.

##### **Research Unit**

Contact: D. MacKinnon, President, Tel: (613) 234-1003.

Personnel: Total is 7 of which 7 are scientists and engineers.

Activities: Fields of specialization: Computer communications protocols based on Open Systems Interconnection (OSI) principles; Text Preparation and Interchange Systems based on ISO and CCITT standards; System Design and Development using the Ada language.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation.

Language(s) in Which Services are Provided: both english and french.

#### **COMPUTER MODELLING GROUP**

3512 33rd Street North West, Calgary, Alberta, T2L 2A6.

##### **Research Unit**

Contact: Anthony D. Au, Manager, Tel: (403) 282-9286.

Personnel: Total is 10 of which 9 are scientists and engineers.

Activities: The Computer Modelling Group is involved in the R&D of numerical modelling techniques. The Group's effort is directed primarily towards the development of petroleum reservoir simulation programs for modelling enhanced oil recovery processes.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation.

Language(s) in Which Services are Provided: english.

#### **COMPUTER SERVICENTERS LTD.**

20 Spadina Rd., Toronto, Ontario, M5R 2S7.

##### **Computer Servicenters Ltd. R&D.**

Contact: R.L. Scazzighino, Vice-President,  
Tel: (416) 964-2023.

Personnel: Total is 7 of which 4 are scientists and engineers.

Activities: Development of realtime/on-line computer systems for: stand alone mini/micro/small computer systems; multi-user environment on fault tolerant systems. Specializing in processing transaction driven accounting applications: group and solo practice-physician accounting/analysis/reporting; inventory controls and order processing-distribution packages; advertising agency-media buying and financial systems; claims assessing-cheque paying and underwriting reporting; retail accounting.

Facilities: Tandem (FT) System; Dual hp 3000 System; Assorted PC Systems.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: english.

#### **COMPUTERIZED CUTTERS LTD.**

1234 Reid Street, Richmond Hill, Ontario, L3R 1C1.

##### **Research Unit**

Contact: Franc Gergek, President, Tel: (416) 764-1500.

Personnel: Total is 1 of which 1 is a scientist or engineer.

Activities: Microprocessor controllers for paper cutters.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: english.

#### **COMPUTERTIME NETWORK CORPORATION**

Suite 304, 3300 cote Vertu, Montreal, Quebec, H4R 2B7.

### Computerization

Admin. Contact: Ray McLellan, Director, Administration,  
Tel: (514) 337-0755.

Scientific Contact: Simon Dyer, Director, Engineering,  
Tel: (514) 337-0755.

Personnel: Total is 4 of which 4 are scientists and engineers.

Activities: Software development using 4th generation tools and technologies. Microprocessor system design and integration. Software product development - productivity tools. CAD (Computer-aided design and drafting). Data-acquisition and real-time control software. Relational databases. Graphics/statistics. Computer networking.

Facilities: Computer systems.

Current or Potential Work Performed for: self or parent company, other clients.

Nature of Work Performed for Others: contract R&D, consultation.

Language(s) in Which Services are Provided: both english and french.

### COMPUTING DEVICES COMPANY

P.O. Box 8508, Ottawa, Ontario, K1G 3M9.

#### Research Unit

Admin. Contact: Trevor Jones, Manager, Engineering Administration, Tel: (613) 596-7272.

Scientific Contact: Robert J. Patton, V-President, Research & Engineering, Tel: (613) 596-7267.

Personnel: Total is 250 of which 180 are scientists and engineers.

Activities: Military electronics including thrust measurement, acoustic processing, multi-purpose displays, ballistics computing, security systems and other related applications engineering.

Facilities: CYBER computer centre, Mechanical CAD, Electronic CAD, Printed Wiring Board CAO, Software generation facilities, Environmental test facilities, Outdoor test range, Electronic Development Labs.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D.

Language(s) in Which Services are Provided: english.

### COMPUTROL SYSTEMS LTD

2226 West 12th Avenue, Vancouver, British Columbia, V6K 3G2.

#### Research Unit

1586 Rand Avenue, Vancouver, British Columbia, V6P 3G2.

Contact: C.F. Drugge, General Manager,  
Tel: (604) 266-1336.

Personnel: Total is 4 of which 4 are scientists and engineers.

Activities: Computerized fuel control; controlled building access products.

Current or Potential Work Performed for: self or parent company.

Nature of Work Performed for Others: testing and analysis.

Language(s) in Which Services are Provided: english.

### CONTERM INC.

110 Hymus Blvd., Pointe Claire, Quebec, H9R 1E8.

#### Advanced Technology Unit

1770 Woodward, suite 200, Ottawa, Ontario, K2C 0P8.

Contact: Marc Thibault, Director, Advanced Technology,  
Tel: (613) 727-9665.

Personnel: Total is 17 of which 8 are scientists and engineers.

Activities: Computer Communications; office systems.

Facilities: VAX computer; software development systems.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation.

Language(s) in Which Services are Provided: both english and french.

#### Product Development Unit

545 Delmar Avenue, Pointe Claire, Quebec, H9R 4A7.

Admin. Contact: G. Dufresne, Director of Engineering,  
Tel: (514) 694-3030.

Scientific Contact: C. Levesque, Director of Engineering Programs, Tel: (514) 694-3030.

Personnel: Total is 38 of which 12 are scientists and engineers.

Activities: Computer terminals; terminal to mainframe communications; education PC's; networking.

Facilities: Computer VAX with unix; CAD for Schematics; logic analyzers; software development systems; precision measuring equipment.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.

Language(s) in Which Services are Provided: both english and french.

### CON-SERVE GROUP LTD

42 Hawksbury Drive, Willowdale, Ontario, M2K 1M5.

#### Research Unit

Contact: Thomas Lanczi, President, Tel: (416) 229-2320.

Personnel: Total is 2 of which 2 are scientists and engineers.

Activities: Software research; solar energy; conservation; policy research; strategic planning; RCD planning and management.

Current or Potential Work Performed for: government, other clients.

Nature of Work Performed for Others: contract R&D, consultation.

Language(s) in Which Services are Provided: english.

### CONCORD SCIENTIFIC CORP

2 Tippet Road, Toronto, Ontario, M3H 2V2.

#### Research Unit

Admin. Contact: Dr. James E. Hunt, President,  
Tel: (416) 630-6331.

Scientific Contact: Phil Fellin, Lab Manager,  
Tel: (416) 630-6331.

Personnel: Total is 55 of which 40 are scientists and engineers.

Activities: Expertise in the areas of atmospheric chemistry and air sampling, monitoring and analysis as well as chemical process and instrumentation development. Analytical laboratory services provided in both environmental and industrial hygiene area; gas chromatography; ion chromatography; specific ion electron analysis; organic contaminant analysis. In the area of process and instrumentation development. Concord provides complete simulation of the chemistry of industrial processes and development of new processes. The company also provides bench and pilot scale testing; customized instrumentation development for process applications and precipitation sampler design and assembly.

Facilities: Ion Chromatograph; Gas Chromatograph; Exposure Chambers.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.  
Language(s) in Which Services are Provided: english.

### **CONNAUGHT LABORATORIES LIMITED**

1755 Steeles Avenue West, Willowdale, Ontario, M2R 3T4.

#### **Connaught Research Institute**

Admin. Contact: Dr. D.A.J. Ives, Assistant Director, Resources Management, Tel: (416) 667-2664.

Scientific Contact: Dr. K.J. Dorrington, Director and Vice-President, Research and Technology, Tel: (416) 667-2826.

Personnel: Total is 100 of which 50 are scientists and engineers.

Activities: R&D in the field of health care: viral vaccines research; bacterial vaccine research; research on immunodiagnostics and hybridoma; research on microencapsulation of living cells from treatment of endocrine disorders - e.g. diabetes; research on the use of genetic engineering for producing health care products - e.g. vaccines; research on wildlife rabies.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: english.

### **CONSERVER GROUP INC (THE)**

356 Hargrave Street, Winnipeg, Manitoba, R3B 2J9.

#### **Research Unit**

Contact: David Waldman, President, Tel: (204) 956-2129.

Personnel: Total is 5 of which 4 are scientists and engineers.

Activities: Heat recovery from commercial laundry exhaust; Heat recovery from Hospital waste incineration; Thermal stratification of air in buildings; Control of commercial cooking exhaust and replacement make-up air; Solar on-off and proportional differential controllers.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.

Language(s) in Which Services are Provided: english.

### **CONSOLIDATED-BATHURST INC.**

800, boul. Dorchester ouest, Montréal, Québec, H3B 1Y9.

#### **Consolidated-Bathurst Inc., Centre de recherches**

255, 1ère Rue, Grand'Mère, Québec, G9T 5L2.

Admin. Contact: André Gélinas, Supervisor, Tel: (819) 538-3341.

Scientific Contact: Jean-Guy Racine, Technical Director, Tel: (819) 538-3341.

Personnel: Total is 36 of which 8 are scientists and engineers.

Activities: Pulp and paper research, instrumentation, equipment, physical and chemical analyses of pulp and paper (and used products or contaminants).

Facilities: TMP (thermomechanical pulp) device; experimental calendar; experimental coater; boiler; smoothing press; computer; pilot plant.

Current or Potential Work Performed for: self or parent company, other clients.

Nature of Work Performed for Others: consultation, testing and analysis.

Language(s) in Which Services are Provided: both english and french.

Note: Descriptive text has been translated from French.

### **CONSULAB INC.**

415 avenue des Laurentides, Beauport, Québec, G1C 4R9.

#### **Research Unit**

Admin. Contact: Louis-Philippe Nadeau, Directeur administratif, Tel: (418) 661-3701.

Scientific Contact: Jean-Luc Beaudoin, ing., Directeur général, Tel: (418) 661-3701.

Personnel: Total is 5 of which 4 are scientists and engineers.

Activities: Rational use of electrical energy; Joulemeter laser optics; programmable controller.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: both english and french.

Note: Descriptive text has been translated from French.

### **CONSULTRONICS LTD**

160 Drumlin Circle, Concord, Ontario, L4K 2T9.

#### **Consultronics R&D Department**

Contact: Choon Yeung, Vice-President, Tel: (416) 738-3741.

Personnel: Total is 7 of which 5 are scientists and engineers.

Activities: Development of electronic circuits applied to test and measurement functions in telecommunication, power systems and telemetry. Development of software algorithms for use in the control and measurement functions of measuring and monitoring equipment.

Facilities: Telephone channel simulator; power line disturbance simulator; signal generators; PCM Pattern generator; software development systems.

Current or Potential Work Performed for: self or parent company.

Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.

Language(s) in Which Services are Provided: english.

### **CONSUMERS' GAS COMPANY LTD (THE)**

P.O. Box 650, Scarborough, Ontario, M1K 5E3.

#### **Technology and Development Department**

Contact: G.S. Kohli, Director of Technology and Development, Tel: (416) 495-5270.

Personnel: Total is 5 of which 5 are scientists and engineers.

Activities: Provide consulting and evaluatory services on behalf of various internal departments (Operations, Engineering, Exploration, Sales and Marketing); specialize in comprehensive comparative studies of newly introduced or experimental heating/cooling concepts; sponsorship and guidance of numerous fundamental and applied research investigations typically placed with various highly specialized research centres and academic institutions across North America; responsible for searching out new technologies world wide and bringing same to the forefront as potential new uses for natural gas or as potential new business opportunities; intensive involvement with respect to alternative energy sources and natural gas as a vehicle fuel has resulted in significant accumulation of expertise in these areas; design, implementation and scientific monitoring of field demonstrations for emerging industrial and commercial natural gas-based technologies.

Facilities: Numerous analytical hardware; access to in-house instrumentation and data acquisition; quality control; laboratory equipment.

Current or Potential Work Performed for: self or parent company, government.

Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.

Language(s) in Which Services are Provided: english.

**CONTINENTAL LABORATORIES (1985) LTD.**

3601 A - 21 Street N.E., Calgary, Alberta, T2E 6T5.

**Research Unit**

Admin. Contact: David Gibeau, Manager, Technical Support, Tel: (403) 250-5125.

Scientific Contact: D. Gibeau, Manager, Technical Support, Tel: (403) 250-5125.

Personnel: Total is 2 of which 2 are scientists and engineers.

Activities: Design and testing of hydrocarbon well logging equipment, including microprocessor and custom instrumentation.

Current or Potential Work Performed for: self or parent company, other clients.

Nature of Work Performed for Others: contract R&D, consultation.

Language(s) in Which Services are Provided: english.

**CONTROL DATA CANADA LIMITED**

1855 Minnesota Court, Mississauga, Ontario, L5N 1K7.

**Computer Development Division**

Admin. Contact: Linda Richardson, Administration Manager, Tel: (416) 826-8640.

Scientific Contact: Terry R. Kirsch, General Manager, Tel: (416) 826-8640.

Personnel: Total is 200 of which 160 are scientists and engineers.

Activities: Mainframe computer hardware and software development; minicomputer hardware and software development; applications software development; performance analysis software development.

Facilities: CAD capability; multi-development computers.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: consultation, testing and analysis.

Language(s) in Which Services are Provided: english.

**Computing Devices Company**

P.O. Box 8508, Ottawa, Ontario, K1G 3M9.

Admin. Contact: Trevor Jones, Administration Manager, R&D, Tel: (613) 596-7272.

Scientific Contact: Bob Patton, Vice-President Research and Engineering, Tel: (613) 596-7267.

Personnel: Total is 780 of which 300 are scientists and engineers.

Activities: Military electronics including thrust measurement, acoustic processing, multi-purpose displays, ballistics computing, security systems and other related applications engineering.

Facilities: CAD capability; CYBER computer centre; dedicated electronics labs; special test facilities.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.

Language(s) in Which Services are Provided: english.

**CONTROLLED SYSTEMS (WINDSOR) LIMITED**

2862 Kew Drive, Windsor, Ontario, N8T 3C6.

**Research Unit**

Admin. Contact: Jerome Quinville, Controller, Tel: (519) 948-4822.

Scientific Contact: Ron Cox, General Manager, Tel: (519) 948-4822.

Personnel: Total is 1 of which 1 is a scientist or engineer.

Activities: Research into use of microprocessors for control of arcwelders.

Facilities: Motorola development system UME10

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: english.

**COUNCIL OF FOREST INDUSTRIES OF B.C.**

1500 - 1055 West Hastings Street, Vancouver, B.C., V6E 2H1.

**Plywood Technical Centre**

735 West 15th Street, North Vancouver, B.C., V7M 1T2.

Contact: A.W. Kempthorne, Plywood Manager, Tel: (604) 985-4191.

Personnel: Total is 7 of which 2 are scientists and engineers.

Activities: Strength investigations of plywood and plywood-lumber components.

Facilities: 260 kN universal testing machine; 7.0 kNm panel flexure testing machine.

Current or Potential Work Performed for: self or parent company, other clients.

Nature of Work Performed for Others: contract R&D.

Language(s) in Which Services are Provided: english.

**COURTAULDS (CANADA), DIV OF COURTAULDS NORTH AMERICA INC**

1150 Montreal Road, Cornwall, Ontario, K6H 5S2.

**Process Development Department**

Admin. Contact: Chris Brown, Chemical Engineer, Tel: (613) 933-1180.

Scientific Contact: A.D. Martin, Technical and Process Development Manager, Tel: (613) 933-1180.

Personnel: Total is 11 of which 4 are scientists and engineers.

Activities: Development of improved operating techniques and procedures to improve quality and reduce cost in the manufacture of rayon staple fibres. Development of new fibre types. Evaluation and development of energy reduction schemes.

Facilities: Laboratory viscose-making equipment; 8-25 micron particle counter; filtration blockage constant equipment.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: english.

**CP RAIL**

P.O. Box 6042, Station A, Windsor Station, Room 155, Montréal, Québec, H3C 3E4.

**Research and Development Department**

P.O. Box 6042, Station A, Windsor Station, Room 155, Montréal, Québec, H3C 3E4.

Contact: A.E. Bethune, Director, Technical & Operations Research, Tel: (514) 395-6656.

Personnel: Total is 18 of which 16 are scientists and engineers.

Activities: Responding to and investigating problems identified by requesting entities of Canadian Pacific related to Technical and Operations Research, including the development of test methodologies and plans, creation or improvement of instrumentation, field testing, and design and development of new specialized equipment. Particular expertise has been developed in the field of Track/Train dynamics, rail electrification, computer simulations, numerical analysis, statistical analysis and computer programming both in common languages and in specialized simulation languages.

Facilities: Rail profile measurement instrumentation; freight car wheel profile measurement instrumentation; freight car wheelset angle-of-attack measurement system.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.

Language(s) in Which Services are Provided: english.

#### **CRONE GEOPHYSICS LIMITED**

3607 Wolfedale Road, Mississauga, Ontario, L5C 1V8.

##### **Crone Geophysics Limited - Research**

Admin. Contact: J. Duncan Crone, President,  
Tel: (416) 270-0096.

Scientific Contact: Heinz Grunenberg, Research Engineer,  
Tel: (416) 270-0096.

Personnel: Total is 5 of which 5 are scientists and engineers.

Activities: Geophysical methods and instruments. Pulse electromagnetics.

Current or Potential Work Performed for: self or parent company, other clients.

Nature of Work Performed for Others: testing and analysis.

Language(s) in Which Services are Provided: english.

#### **CROSFIELD MUIRHEAD (CANADA) LTD**

50 Galaxy Blvd., Unit 4, Rexdale, Ontario, M9W 4Y5.

##### **Research Unit**

Admin. Contact: J.B. Crampton, General Manager,  
Tel: (416) 675-7450.

Scientific Contact: B.W. Daniels, Chief Engineer,  
Tel: (416) 675-7450.

Personnel: Total is 2 of which 2 are scientists and engineers.

Activities: Image processing and telecommunications, specializing in methods of image display and interchange for meteorological and press applications.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: english.

#### **CRUSTACES VIVANTS MADELINOTS INC.**

C.P. 182, Cap-aux-meules, Iles-de-la-Madeleine, Québec, G0B 1B0.

##### **Recherche sur le homard**

Contact: Pierre Fredette, Biologiste, Tel: (418) 986-3416.

Personnel: Total is 2 of which 2 are scientists and engineers.

Activities: Research on lobster conservation and breeding.

Facilities: Lobster pond; conservation system; natural breeding system.

Current or Potential Work Performed for: self or parent company, government.

Nature of Work Performed for Others: contract R&D.

Language(s) in Which Services are Provided: french.

Note: Descriptive text has been translated from French.

#### **CRYOVAC DIVISION W. R. GRACE & CO. CANADA LTD**

2365 Dixie Road North, Mississauga, Ontario, L4Y 2A2.

##### **Cryovac Canada**

Contact: R.A. Bolton, Technical Director,  
Tel: (416) 273-5656.

Personnel: Total is 16 of which 9 are scientists and engineers.

Activities: Perishable food packaging systems based on plastic flexible films.

Facilities: F.T.I.R.; OXTRAN and other permeability.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: both english and french.

#### **CTF SYSTEMS INC.**

15-1750 McLean Avenue, Port Coquitlam, British Columbia, V3C 1M9.

#### **Research Unit**

Admin. Contact: Dr. M.B. Burbank, President,  
Tel: (604) 941-8561.

Scientific Contact: Dr. Jiri Urba, Vice-President,  
Tel: (604) 941-8561.

Personnel: Total is 24 of which 12 are scientists and engineers.

Activities: Cryogenic electronics; superconducting magnetometer and gradiometer instrumentation; Biomagnetic instrumentation; superconducting magnet development (re MAGLEV applications); ultrasonic transducer development; ultrasonic non-destructive instrumentation; micro-processor applications; data processing; Josephson Junction micro-electronic device development.

Facilities: Low magnetic field test site; liquid helium storage and handling facilities; RF shield room; PDP-11/34 computer; clean room facilities; DC, RF & RF Revised DC Sputtering System with substrate coding or heating; rotating substrate table; 10<sup>-8</sup> torr base pressure; electron beam desposition and sys to three different sputting targets; multiple gas management system & compatible with CF4 sputter etching. Projection lithographic families. (all new facilities for development of Josephson Junction micro electronics).

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D.

Language(s) in Which Services are Provided: english.

#### **CULINAR INC.**

C.P. 2000, rue Notre-Dame, Ste-Marie de Beauce, Quebec, G6E 3B3.

##### **Division de la pâtisserie et confiserie**

Contact: Marius L. Paquin, Directeur de R-D,  
Tel: (418) 387-5776.

Personnel: Total is 55 of which 25 are scientists and engineers.

Activities: Mechanical engineering service: development and manufacture of 75% of our production equipment. Specifications and procedures service: research and development of new products; research and testing of the efficiency of ingredients and raw materials; all specifications. Packing service: research and testing of packing materials, packing systems and so on. Laboratories: microbiological and physicochemical analyses, and research on shelf life, irradiation, sugars, fats and so on.

Facilities: Laboratory: analysis equipment; instruments for the assembly and inspection of electronic equipment; ovens; mixers; and so on.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: english.

Note: Descriptive text has been translated from French.

#### **CYBERNEX LIMITED**

1257 Algoma Road, Ottawa, Ontario, K1B 3W7.

##### **Cybernex- Engineering Division**

Admin. Contact: Dave Londry, President,  
Tel: (613) 741-1540.

Scientific Contact: Jim Gadzaia, Director of Engineering,  
Tel: (613) 741-1540.

Personnel: Total is 29 of which 6 are scientists and engineers.

Activities: Video display product development; microcomputer video controller development; high resolution colour graphics video controller development; communications software development; microprocessor operating system development; compiler and interpreter development.

Facilities: Computer aided design systems (2); microprocessor development systems (12); RF Spectrum Analyser; DEC VAX 11/750; CSA/UL Lab.  
Current or Potential Work Performed for: self or parent company, government, other clients.  
Nature of Work Performed for Others: contract R&D.  
Language(s) in Which Services are Provided: both english and french.

#### **D B ROBINSON & ASSOCIATES LTD**

9419 20th Avenue, Edmonton, Alberta, T6N 1E5.

##### **Research Unit**

Admin. Contact: Donald B. Robinson, President,  
Tel: (403) 463-8638.

Scientific Contact: Dr. H. Kalra, Manager Laboratory  
Operations, Tel: (403) 463-8638.

Personnel: Total is 10 of which 8 are scientists and engineers.

Activities: Vapor-liquid equilibrium and phase behavior in natural gases, condensates and oils. Hydrate formation and inhibition in hydrocarbon and related systems. Properties and phase behavior of high hydrogen-sulfide reservoir fluids. Supercritical carbon dioxide extraction. Vapor-liquid equilibrium in simple mixtures of organic chemicals including ethers, alcohols, aromatics and related substances. Phase behavior and properties of heavy oils or bitumens in the presence of carbon dioxide, steam or other light gases. Development of mathematical models to describe and predict the behavior of all of the above systems. Development of computer software based on above mathematical models to carry out relative engineering calculations.

Facilities: VLE cells; enhanced oil recovery units; motorized high pressure viscometer; computerized positive displacement pump; sulfur solubility equipment; heavy oil VLE equipment.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.

Language(s) in Which Services are Provided: english.

#### **D.A. STUART INC**

43 Upton Road, Scarborough, Ontario, M1L 2C1.

##### **D.A. Stuart Inc, Development and Technical Service Laboratory**

59E Howden Road, Scarborough, Ontario, M1R 3C7.  
Contact: Wolfgang Pfuhl, Laboratory Manager,  
Tel: (416) 751-6615.

Personnel: Total is 8 of which 7 are scientists and engineers.

Activities: Development of metalworking fluids (oil based products, conventional emulsions, semi-synthetics and synthetic cutting, grinding, rolling, drawing and other lubricating fluids) with emphasis on the development of water-reducible metalworking fluids having improved rust inhibition and antimicrobial stability.

Facilities: HPLC; IR spectrophotometer; GC; Coulter counter; Vickers 104-C vane pump.

Current or Potential Work Performed for: self or parent company, other clients.

Nature of Work Performed for Others: testing and analysis.

Language(s) in Which Services are Provided: english.

#### **D.G. HENDERSON & ASSOCIATES LTD**

2081 Oxford Street East, London, Ontario, N5V 2Z7.

##### **Henderson Industries**

Admin. Contact: D.G. Henderson, P.Eng., President,  
Tel: (519) 451-9920.

Scientific Contact: D.G. Henderson, P. Eng., President,  
Tel: (519) 451-9920.

Personnel: Total is 4 of which 2 are scientists and engineers.

Activities: Custom micro computers systems; control equipment; new product development; communications & display systems; peak load power systems.

Facilities: Micro computer development system; custom printed circuit board facility.

Current or Potential Work Performed for: self or parent company, other clients.

Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.

Language(s) in Which Services are Provided: english.

#### **DANECRAFT MECHANICAL DESIGN LIMITED**

5516D - 40 Street S.E., Calgary, Alberta, T2C 2A1.

##### **Case Clamp Unit**

1605 - 17 Street S.E., Calgary, Alberta, T2G 3V4.

Contact: Jach Friessen, President, Tel: (403) 232-6955.

Personnel: Total is 4 of which 1 is a scientist or engineer.

Activities: Design Engineering; Mechanical Engineering.

Current or Potential Work Performed for: other clients.

Nature of Work Performed for Others: consultation, testing and analysis.

Language(s) in Which Services are Provided: english.

##### **Nascor Profile Cutter Unit - Cano Structures**

7803G - 35 Street S.E., Calgary, Alberta, T0L 1T0.

Contact: R. Dettbarn, Manager, Tel: (403) 279-1966.

Personnel: Total is 5 of which 1 is a scientist or engineer.

Activities: Mechanical Engineering Design.

Current or Potential Work Performed for: self or parent company.

Nature of Work Performed for Others: consultation, testing and analysis.

Language(s) in Which Services are Provided: english.

##### **Eso Resources - Wind Generator Unit**

Judy Creek Field Facilities, Swan Hills, Alberta, T0G 2C0.

Admin. Contact: Morris Linnell, Production Development  
Engineer, Tel: (403) 232-4728.

Scientific Contact: Morris Linnell, Production Development  
Engineer, Tel: (403) 232-4728.

Personnel: Total is 6 of which 2 are scientists and engineers.

Activities: Aeronautical Engineering and Design; Mechanical Engineering and Design; Designing for Height, Wind, and Speed; Voltage and Maintenance Free Specifications.

Current or Potential Work Performed for: other clients.

Nature of Work Performed for Others: consultation, testing and analysis.

Language(s) in Which Services are Provided: english.

##### **Canalog Wood Industries Ltd. - Log Production Machine Unit**

740 Industrial Road #1, Cranbrook, British Columbia,  
V1C 4J6.

Contact: Wilf Wlochel, President, Tel: (604) 489-5074.

Personnel: Total is 5 of which 1 is a scientist or engineer.

Activities: Design engineering of production machine which was a prototype to cut logs according to customer specifications for log home manufacturing.

Current or Potential Work Performed for: self or parent company.

Nature of Work Performed for Others: consultation, testing and analysis.

Language(s) in Which Services are Provided: english.

**DANIELS ELECTRONIC LTD**

225 St. Lawrence Street, Victoria, British Columbia,  
V8V 1Y2.

**Engineering Division, Daniels Electronics Ltd**

Admin. Contact: R.J. Daniels, Vice-President Engineering,  
Tel: (604) 382-8268.

Scientific Contact: R. Small, Manager Engineering,  
Tel: (604) 382-8268.

Personnel: Total is 4 of which 3 are scientists and engineers.

Activities: Development synthesized H.F. S.S.B. communication equipment and associated equipment; development microprocessor controlled VHF/UHF repeaters.

Facilities: Telecommunications test equipment; environmental test chambers.

Current or Potential Work Performed for: self or parent company.

Nature of Work Performed for Others: contract R&D.

Language(s) in Which Services are Provided: english.

**DATA KINETICS LTD**

97 Norman Street, Ottawa, Ontario, K1S 3K5.

**Research Unit**

Admin. Contact: Gregory Kells, Chairman,  
Tel: (613) 238-6709.

Scientific Contact: William Olders, Vice-President,  
Tel: (613) 238-6709.

Personnel: Total is 25 of which 22 are scientists and engineers.

Activities: Computer software - mainframe and micro; computer assisted instruction/computer based training; communications software; design and implementation methodology for computer software; artificial intelligence; ergonomics; training programs for computer software.

Facilities: Micro-computers; mainframe computer facility; software tools.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.

Language(s) in Which Services are Provided: english.

**DATALINE INC.**

67 Richmond Street, Toronto, Ontario, M5H 1Z4.

**DI Associates**

3085 Glen Erin Drive, Mississauga, Ontario, M5R 2L2.

Admin. Contact: John Gleason, Controller,  
Tel: (416) 365-1515.

Scientific Contact: Joseph C. Paradi, President,  
Tel: (416) 365-1515.

Personnel: Total is 10 of which 8 are scientists and engineers.

Activities: Operating systems and language support software for mainframe and mini-computer applications; communications network software; communications system and process control design; computer applications to database and communications requirements.

Facilities: Computers: VAX750; PDP11/23; IBM System 38.

Current or Potential Work Performed for: self or parent company, other clients.

Nature of Work Performed for Others: contract R&D, consultation.

Language(s) in Which Services are Provided: english.

**DATATECH SYSTEMS LTD**

1095 McKenzie Avenue, Victoria, British Columbia,  
V8P 2L4.

**Circuit Board Engineering R&D Facility (CBEF)**

5665 Kingsway Avenue, Burnaby, British Columbia,  
V5H 2G4.

Admin. Contact: Jim K. Hendry, Director, Planning,  
Tel: (604) 437-3751.

Scientific Contact: Mr. John Hoar, Manager, Board Division, Tel: (604) 437-3751.

Personnel: Total is 8 of which 4 are scientists and engineers.

Activities: The CBEF conducts applied research on microprocessor-based printed circuit boards. Functions include diagnostics and custom programming, "reverse engineering", performance evaluation, quality control, margin testing, engineering upgrades, service and repair. The facility also conducts experimental re-engineering of production boards to yield new or value-added application capabilities.

Facilities: Fairchild programmable diagnostics system; scopes, probes, computers, etc.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, testing and analysis.

Language(s) in Which Services are Provided: english.

**Field Engineering Division (FED)**

5665 Kingsway Avenue, Burnaby, B.C., V5H 2G4.

Admin. Contact: Jim K. Hendry, Director, Planning,  
Tel: (604) 479-7117.

Scientific Contact: Mr. Walt Bayger, Director, Field Engineering, Tel: (604) 437-3751.

Personnel: Total is 5 of which 4 are scientists and engineers.

Activities: The FED conducts applied research and developments in the area of microprocessor-based systems generally. Target areas include computers, communications, office systems, biomedical devices/instrumentation, process control/monitoring systems and others. Functions include systems interfacing, configuration design, performance optimization, engineering re-design, and others.

Facilities: Scopes; probes; computers etc.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, testing and analysis.

Language(s) in Which Services are Provided: english.

**DATEM LTD.**

148 Colonnade Road, Nepean, Ontario, K2E 7R4.

**Research Unit**

Admin. Contact: Sandra Budge, Administrative Assistant,  
Tel: (613) 225-5919.

Scientific Contact: William P. Thomas, President,  
Tel: (613) 225-5919.

Personnel: Total is 7 of which 5 are scientists and engineers.

Activities: Research, design and development of microprocessor based industrial control hardware & software modules. Datem Limited produces a line of hardware and software products which provide building blocks for construction of real-time, distributed control systems based on the BITBUS interconnect. These products provide the optimal base technology for easing the complex task of design and implementation of distributed control systems for both system integrators and OEM's.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: english.

**DAVIS ENGINEERING LTD. (CONSULTING ENGINEERS)**

1260 Old Innes Road, Ottawa, Ontario, K1B 3V3.

**Research Unit**

Admin. Contact: Mr. D.H. Richardson, Manager,  
Administration, Tel: (613) 748-5500.

Scientific Contact: Mr. W. Roland Davis, President,  
Tel: (613) 748-5500.

Personnel: Total is 10 of which 6 are scientists and engineers.

Activities: Mechanical design; aerothermodynamic; electronics; vehicle engineering; marine; repair and overhaul facilities; fabrication facilities; computer modelling.

Facilities: Hot gas wind tunnel; flow visualization centrifugal pump; tank/car - small scale test tank for burning tank/car studies.

Current or Potential Work Performed for: government.

Nature of Work Performed for Others: contract R&D, testing and analysis.

Language(s) in Which Services are Provided: english.

**DAYLESS MANUFACTURING (CANADA) LIMITED**

50 Haas Road, Rexdale, Ontario, M9W 3A2.

**Research Unit**

39 Doughton Road, Concord, Ontario, L4K 1P8.

Admin. Contact: Oskar Stunad, Vice-President,  
Tel: (416) 743-2160.

Scientific Contact: George Albert Rice, President,  
Tel: (416) 669-4944.

Personnel: Total is 8 of which 2 are scientists and engineers.

Activities: Electrohydraulic actuators; electromechanical actuators; electro pneumatic actuators; fail safe actuators; instrumentation tubing systems; intelligent actuators.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: english.

**DBM INDUSTRIES LIMITED**

10340 Côte de Liesse Road, Lachine, Québec, H8T 1A3.

**DBM Research**

Contact: Ray Pike, Vice-President, Tel: (514) 636-4723.

Personnel: Total is 25 of which 4 are scientists and engineers.

Activities: Machinery (die-casting).

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: english.

**DE HAVILLAND AIRCRAFT CANADA LTD (THE)**

Garratt Boulevard, Downsview, Ontario, M3K 1Y5.

**Research Unit**

Admin. Contact: R.G. Batch, Director, Development Engineering, Tel: (416) 633-7310.

Scientific Contact: B. Eggleston, Manager, Advanced Design, Tel: (416) 633-7310.

Personnel: Total is 5 of which 5 are scientists and engineers.

Activities: Energy Efficient STOL Transport Aircraft including: design and test of new airfoils and high lift systems; wind tunnel tests of complete aircraft models; design and test of new propellers; investigations of powerplant installation effects; development of new methods of aerodynamic analysis; design studies of future STOL transport aircraft.

Facilities: Electric motors for propeller drives; air motors for propeller drives; sundry propellers; special strain gauge balances.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D.

Language(s) in Which Services are Provided: english.

**Augmentor Research and Technical Group**

Garratt Blvd., Downsview, Ontario, M3K 1Y5.

Admin. Contact: J.A. Conway, Manager of Engineering and Administration, Tel: (416) 633-7310.

Scientific Contact: D.C. Whitley, Manager of Advanced Research and Technology, Tel: (416) 633-7310.

Personnel: Total is 17 of which 14 are scientists and engineers.

Activities: Aerodynamics R&D of powered-lift aircraft for STOL and VTOL including (A) aircraft design studies; performance estimates; propulsion systems studies. (B) experimental aerodynamics; wind tunnel model design (especially powered and large-scale models); low speed and transonic wind tunnel testing of two- and three-dimensional models; laboratory development of advanced thrust augmentor (ejectors) for STOL and VTOL aircraft designs. (C) theoretical aerodynamics; design of multi-foil, transonic airfoils for augmentor-wing concept aircraft; three-dimensional wing design and analysis.

Facilities: Dedicated air compressor plant for blow-down test system, with thrust and mass flow measurement devices; computer-based, data acquisition system; 18" square wind tunnel.

Current or Potential Work Performed for: government.

Nature of Work Performed for Others: contract R&D.

Language(s) in Which Services are Provided: english.

**DEARBORN CHEMICAL COMPANY LIMITED**

P.O. Box 3060, Station A, Mississauga, Ontario, L5A 3T5.

**Dearborn Research Group**

Contact: Dr. J.E. Waller, Research Director,

Tel: (416) 828-9111.

Personnel: Total is 19 of which 8 are scientists and engineers.

Activities: Development of advanced approaches to corrosion and scale control in industrial waste systems.

Facilities: Custom designed pilot scale equipment to simulate industrial water systems.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.

Language(s) in Which Services are Provided: english.

**Dearborn Environmental Consulting Services**

Contact: Igor Marvan, Manager, Tel: (416) 828-9111.

Personnel: Total is 8 of which 6 are scientists and engineers.

Activities: Development of advanced waste treatment methods; development of new physical/chemical and biological processes to treat complex industrial wastes; conversion of biomass to liquid fuels.

Facilities: Custom designed pilot scale equipment to simulate waste treatment and industrial waste systems.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.

Language(s) in Which Services are Provided: english.

**DEB SWARFEGA INC.**

P.O. Box 730, Waterford, Ontario, N0E 1Y0.

**Research Unit**

Admin. Contact: N. Williamson, Vice-President,  
Tel: (519) 443-8697.

Scientific Contact: M. Hough, Chief Chemist,  
Tel: (519) 443-8697.

Personnel: Total is 2 of which 2 are scientists and engineers.

Activities: Development of formulations in the skin care and surface cleaning field and testing of the same; container development; development of test methods for use in the product development and evaluation process; research into skin chemistry.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: consultation, testing and analysis.

Language(s) in Which Services are Provided: both english and french.

#### **DEES COMMUNICATIONS ENGINEERING LTD**

6475 C 64th Street, R.R. 5, Delta, British Columbia, V4K 4E2.

##### **Research Unit**

Contact: D.S. Simkins, P. Eng., Chairman,  
Tel: (604) 946-8433.

Personnel: Total is 6 of which 3 are scientists and engineers.

Activities: The unit serves two market sectors, the telephone industry and industrial controls. In the telephone sector, the activities relate to central office, plant equipment and the products are based on identified operating problems some of which are new due to deregulation. e.g. C.O. The development of ANI markers (Automatic Number Indication) on 2 party lines whereby the line is marked and not instruments on the line, the selector on the line and not the instrument on multiple party selective frequency ringing with ring isolation when the line is seized. PLANT EQUIPMENT. Power failures trunk bypass systems for PBX applications. Automatic Ground Start systems for PBX and Key systems. Specialized electronic ringers for use on OEM basis with manufacturers of PBX and Key systems. CONSUMER ACTIVITIES. Full range of electronic ringers, consumer installable as an interface between a plug in telephone and wall jack providing a variety of tones. All of this family are based on meeting FCC, CS03, EIA specifications and all relate to advanced use of piezo ceramic transducers. TEST EQUIPMENT. Due to deregulation, the need has arisen for field test equipment both in phone mart stores and in refurbishing of operations to determine the speech path, the dial tone, the ringing and the cord continuity and the signalling digits, both pulse and tone. INDUSTRIAL SECTOR. Development of micro-processor based controlled equipment using sensors to control the servo mechanism which determines, for example, the delivery of salt or sand from highway trucks. Other applications of the same basic theme approach dispense liquids from a bar behind trucks, including fertilizer etc.

Facilities: Multiple digital ringing frequency generator.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: english.

#### **DEGREMONT INFILCO LTD**

3300 Côte Vertu, Montréal, Québec, H4R 2B7.

##### **Research Unit**

Admin. Contact: H. Mitchell, V-président, Marketing,  
Tel: (514) 337-2010.

Scientific Contact: R. Cyr, V-président, Recherche et Développement, Tel: (514) 337-2010.

Personnel: Total is 4 of which 3 are scientists and engineers.

Activities: Treatment of municipal and industrial water and waste water.

Facilities: Pilot plants - filtration, ozonization, coalescing, flotation, and sedimentation.

Current or Potential Work Performed for: government, other clients.

Nature of Work Performed for Others: testing and analysis.

Language(s) in Which Services are Provided: both english and french.

Note: Descriptive text has been translated from French.

#### **DELTA ENGINEERING LTD**

505 Consumers Rd, Suite 905, Willowdale, Ontario, M2J 4V8.

##### **Research Unit**

Admin. Contact: Barbara Williams, Secretary,  
Tel: (416) 494-0606.

Scientific Contact: George T. Halmos, President,  
Tel: (416) 494-0606.

Personnel: Total is 1 of which 1 is a scientist or engineer.

Activities: Applied R&D: formability of metals; roll forming, brake forming, press forming, bending, curving and other forming operations and industrial applications; steel, aluminum, zirconium, titanium and other metals; product development; manufacturing technology R&D for metal products; failure analysis and testing, special equipment and tooling for metal forming, fabricating industry.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.

Language(s) in Which Services are Provided: english.

#### **DENOVAN LTD**

55 Glendale Road, Brantford, Ontario, N3T 1P5.

##### **Research Unit**

Contact: John Denovan, President, Tel: (519) 753-2433.

Personnel: Total is 1 of which 1 is a scientist or engineer.

Activities: Machine design of capital goods for process industries. Small computer hardware.

Current or Potential Work Performed for: self or parent company, other clients.

Nature of Work Performed for Others: contract R&D, consultation.

Language(s) in Which Services are Provided: english.

#### **DESOTO COATINGS LIMITED**

895 Rangeview Road, Mississauga, Ontario, L5E 3E7.

##### **Coatings R&D Laboratory**

895 Rangeview Road, Mississauga, Ontario, L5E 3E7.

Contact: G. Parsons, Technical Director,  
Tel: (416) 274-9500.

Personnel: Total is 13 of which 10 are scientists and engineers.

Activities: Lab is involved in research and development of protective and decorative coatings for specialized end uses. Research involves resin development, raw material evaluation, formula development to meet specific performance requirements, formula optimization for cost, manufacturing efficiency, etc. Specialization: Stains and clears for exterior wood substrates, architectural consumer coatings, aerospace coatings, rigid container coatings, agricultural Eq. coatings, coil coatings, electrodeposition coatings, transformer and transportation coatings.

Facilities: Accelerated weathering apparatus; color spectrophotometer; IR and gas chromatograph; application equipment; micro-computers; equipment to test physical, chemical and corrosion resistance properties, etc.

Current or Potential Work Performed for: self or parent company.  
Language(s) in Which Services are Provided: english.

#### **DET NORSKE VERITAS (CANADA) LTD**

1110-10201 Southport Road South West, Calgary, Alberta, T2W 4X9.

##### **Research Unit**

Admin. Contact: Jan-Erik Hagen, President,  
Tel: (403) 253-3422.

Scientific Contact: Ian J. Jordaan, Ph.D., P.Eng., Vice President, R&D, Tel: (403) 253-3422.

Personnel: Total is 8 of which 7 are scientists and engineers.

Activities: Cold climate technology, general; ice mechanics; material technology related to Arctic use of steel and concrete; ice-structures interaction; risk/reliability related to frontier resources development; naval architecture and marine engineering; offshore engineering.

Facilities: Computer Hardware and Software (Pilot, Sesam 69, Sesam 80, Fentis, Abaqus).

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation.

Language(s) in Which Services are Provided: both english and french.

#### **DEXTER-LAWSON PRODUCTS LIMITED**

156 Sheldon Drive, P.O. Box 639, Cambridge, Ontario, N1R 5W1.

##### **Research Unit**

Admin. Contact: G. Scheben, Director of Engineering & Service, Tel: (519) 623-2700.

Scientific Contact: Robert J. Burns, Chairman of the Board, Tel: (519) 623-2700.

Personnel: Total is 6 of which 2 are scientists and engineers.

Activities: Graphic Arts Bindery Automation; Mechanical and Electronic.

Current or Potential Work Performed for: self or parent company.

Nature of Work Performed for Others: testing and analysis.

Language(s) in Which Services are Provided: english.

#### **DEXTRAN PRODUCTS LIMITED**

421 Comstock Road, Scarborough, Ontario, M1L 2H5.

##### **Blood Products Division**

Admin. Contact: George Usher, Vice President,  
Tel: (416) 755-2231.

Scientific Contact: George Healy, Scientific Director,  
Tel: (416) 755-2231.

Personnel: Total is 7 of which 3 are scientists and engineers.

Activities: Tissue culture; high performance liquid chromatography and its applications.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: english.

#### **DIAGNOSTIC CHEMICALS LIMITED**

West Royalty Industrial Park, Charlottetown, Prince Edward Island, C1E 1B0.

##### **Chemical R&D**

23 First Street, West Royalty Industrial Park, Charlottetown, Prince Edward Island, C1E 1B0.

Contact: Gary Reid, Director R&D, Tel: (902) 566-1396.

Personnel: Total is 6 of which 3 are scientists and engineers.

Activities: Synthetic organic chemistry.

Current or Potential Work Performed for: self or parent company.

Nature of Work Performed for Others: testing and analysis.

Language(s) in Which Services are Provided: english.

##### **Diagnostic R&D**

16 First Street, Charlottetown, Prince Edward Island, C1E 1B0.

Contact: Dr. Julian Gaudin, Director R&D,  
Tel: (902) 566-1396.

Personnel: Total is 14 of which 5 are scientists and engineers.

Activities: Diagnostic procedures for various components in blood - new and improved procedures; isolation of enzymes.

Current or Potential Work Performed for: self or parent company.

Nature of Work Performed for Others: testing and analysis.

Language(s) in Which Services are Provided: english.

##### **Biotech R&D**

Unit 8, North Mall, West Royalty Industrial Park, Charlottetown, Prince Edward Island, C1E 1B0.

Contact: Dr. Praful Patel, Director, Tel: (902) 566-1396.

Personnel: Total is 6 of which 4 are scientists and engineers.

Activities: Diagnostic reagents - controls etc; immuno chemistry reagents.

Current or Potential Work Performed for: self or parent company.

Nature of Work Performed for Others: testing and analysis.

Language(s) in Which Services are Provided: english.

#### **DICON SYSTEMS LIMITED**

719 Clayson Rd, Weston, Ont., M9M 2H4.

##### **Research Unit**

719 Clayson Rd., Weston, Ont., M9M 2H4.

Contact: J. Mallory, Executive Vice President,  
Tel: (416) 745-6044.

Personnel: Total is 12 of which 5 are scientists and engineers.

Activities: Smoke detection - optical and ionization; passive infrared intrusion detection systems; gas detection systems.

Facilities: Smoke density measurement.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: english.

#### **DIFFRACTO LIMITED**

6360 Hawthorne Drive, Windsor, Ontario, N8T 1J9.

##### **Research Unit**

Admin. Contact: J.J. Toews, Vice-President, Finance,  
Tel: (519) 945-6373.

Scientific Contact: O. Hageniers, Vice-President, Eng. & Research, Tel: (519) 945-6373.

Personnel: Total is 30 of which 18 are scientists and engineers.

Activities: Electro-optical sensors for measurement and inspection; vision sensors for robot guidance; Servo and hydraulic control systems.

Current or Potential Work Performed for: self or parent company, other clients.

Nature of Work Performed for Others: contract R&D, consultation.

Language(s) in Which Services are Provided: english.

#### **DIGITAL ENGINEERING INC.**

1186 Russell Street, Thunder Bay, Ontario, P7B 5N2.

##### **Research Unit**

Contact: WM Fauconnier, P.eng, President,

Tel: (807) 623-3700.

Personnel: Total is 7 of which 1 is a scientist or engineer.

Activities: Unique Hardware and Software approaches for industrial use.

Facilities: Software Development Systems; Circuit Board Etcher; Relative Humidity Generator (stainless steel).

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: english.

#### **DIPIX SYSTEMS LIMITED**

120 Colonnade Road, Ottawa, Ontario, K2E 7J5.

##### **Research Unit**

Admin. Contact: Glyn F. Jones, Vice-President, Business Development, Tel: (613) 224-5175.

Scientific Contact: Stephen Gourley, Vice-President, Technical, Tel: (613) 224-5175.

Personnel: Total is 50 of which 40 are scientists and engineers.

Activities: Image analysis techniques; image display and processing system; software for applications of image analysis to: remote sensing, medical imaging, graphics arts, forensic science, seismic processing, visual inspection robotics etc.

Facilities: VAX computer; Image Analysis Systems.

Current or Potential Work Performed for: self or parent company, government, other clients.

Language(s) in Which Services are Provided: english.

#### **DIVERSEY WYANDOTTE INC**

2645 Royal Windsor Drive, Mississauga, Ontario, L5J 1L1.

##### **Diversey Wyandotte Inc, Research Centre**

Contact: Dr. David R. Kane, Vice President, Research,

Tel: (416) 822-3511.

Personnel: Total is 25 of which 17 are scientists and engineers.

Activities: Surface absorption at surfaces; cleaning agent and detergents; laundering technology; antimicrobial effects of solutions; sequestration and control of water hardness; chemistry of surfaces; aqueous lubrication and lubricants.

Facilities: Low level radio-active tracer equipment.

Current or Potential Work Performed for: self or parent company, government.

Nature of Work Performed for Others: contract R&D.

Language(s) in Which Services are Provided: english.

#### **DOBROCKY SEATECH LTD.**

9865 West Saanich Road, P.O. Box 6500, Sidney, B.C., V8L 4M7.

##### **Research Unit**

Admin. Contact: John R. Harper, Manager West Coast Region, Tel: (604) 656-0111.

Scientific Contact: Andrew L. Wood, Vice President, Tel: (604) 656-0111.

Personnel: Total is 31 of which 21 are scientists and engineers.

Activities: Environmental chemistry - trace metal speciation; oilspill research. Physical oceanography - arctic oceanography. Marine geosciences - coastal processes; sediment transport. Electronics engineering - oceanographic instrumentation.

Facilities: Class 100 clean laboratory.

Current or Potential Work Performed for: government, other clients.

Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.

Language(s) in Which Services are Provided: english.

#### **DOCUMENTED CIRCUITS INC**

P.O. Box 8, Station A, Kingston, Ontario, K7M 6P9.

##### **Research Unit**

Admin. Contact: Don C. Case, President,

Tel: (613) 549-5522.

Scientific Contact: Romulo Severino, Vice-President of Engineering, Tel: (613) 549-5522.

Personnel: Total is 44 of which 40 are scientists and engineers.

Activities: Design and implementation of CAD/CAM system for use in the production of printed circuit boards.

Facilities: Graphics terminals; VAX computer systems; Ethernet system linking the above.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: english.

#### **DOFASCO INC**

1330 Burlington St. East, Hamilton, Ontario, L8N 3J5.

##### **Dofasco Research Dept.**

1390 Burlington St. East, Hamilton, Ontario, L8N 3J5.

Admin. Contact: Peter Stubbs, Res. Sect. Manager,

Tel: (416) 544-3761.

Scientific Contact: N.G. Thomas, Director,

Tel: (416) 544-3761.

Personnel: Total is 70 of which 40 are scientists and engineers.

Activities: Raw materials (iron ore and coal) characterisations; steelmaking; solidification; rolling (hot and cold); coating (zinc, tin, aluminum-zinc, organics, chromium); corrosion; properties and applications.

Facilities: S.E. microscopes; electron probe micro analysers; ESCA; gleeble dilatometer; quantimet; comprehensive analytical equipment.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: english.

#### **DOMCO INDUSTRIES LTD**

10050 Côte de Liesse, Lachine, Québec, H8T 1H3.

##### **Research Unit**

1001 Yamaska St. East, Farnham, Quebec, J2N 2R4.

Admin. Contact: Claude Côte, Plant Manager,

Tel: (514) 866-5461.

Scientific Contact: Claude Charest, R&D Manager,

Tel: (514) 866-5461.

Personnel: Total is 8 of which 4 are scientists and engineers.

Activities: Development of formulations for plastisols, dry blends, polyurethane coatings (solvent, water based,) and its application and usage on various substrates like fiberglass, felt base, vinyl film and foamed sheets. Analysis of products and compounds and raw material using gas chromatography.

Facilities: Gas chromatography and computer; Carls Fisher; TGA-Dupont.

Current or Potential Work Performed for: self or parent company, other clients.

Nature of Work Performed for Others: consultation.

Language(s) in Which Services are Provided: both english and french.

#### **DOMGLAS INC.**

2070 Hadwen Road, Mississauga, Ontario, L5K 2C9.

**Domglas Research**

Admin. Contact: Mr. H. Shotten, Vice-President,  
Tel: (416) 823-3860.

Scientific Contact: Dr. Leon Levene, Manager Research,  
Tel: (416) 823-3860.

Personnel: Total is 80 of which 30 are scientists and engineers.

Activities: Improve strength of glass; glass containers coatings, develop new and/or improve on old; develop new equipment for applying coatings on glass containers; fundamental understanding of reaction of coatings with glass surface; develop techniques for improving forming machine operations; produce lighter and stronger glass containers; develop novel glass container packages.

Facilities: Infrared and ultraviolet spectrophotometry; flame photometry; optical microscopy; X-ray absorption.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: english.

**DOMINION AUTOMOTIVE INDUSTRIES INC.**

36 Vine Avenue, Toronto, Ontario, M6P 1V7.

**Dominion Automotive Industries Inc.**

Admin. Contact: K.R. Macintyre, Vice-President,  
Engineering, Tel: (416) 763-3501.

Scientific Contact: R. Svazas, Engineering Manager,  
Tel: (416) 763-3501.

Personnel: Total is 23 of which 5 are scientists and engineers.

Activities: Automotive/truck mirrors - Design, functional performance, mechanical and environmental testing for both OEM and aftermarket applications. Federal and European standards. Automotive/truck mirrors - Design, photometric testing, functional performance, mechanical and environmental testing for OEM and aftermarket applications and, where applicable, to Federal and European standards. Back-up alarms - Mechanical, environmental and sound level testing. Facilities for prototype manufacturing of above products.

Facilities: Vibration tester; Photometric test equipment; Colour measuring equipment; Sound level and matrix; Environmental test chambers; Integrating sphere.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: english.

**DOMTAR INC.**

P.O. Box 7210, Montréal, Québec, H3C 3M1.

**Domtar Research**

P.O. Box 300, Senneville, Québec, H9X 3L7.

Admin. Contact: E.J. Tarlton, Director; Technical Servs & Admin., Tel: (514) 457-6810.

Scientific Contact: Dr. S.S. Danyluk, Vice-President, Res & Env Tech., Tel: (514) 848-5991.

Personnel: Total is 108 of which 52 are scientists and engineers.

Activities: Pulp and paper research: chemical and mechanical pulping; chemical bleaching; recovery of pulping chemicals; fibre characterization; paper machine runnability and paper uniformity; paper coating and filler developments; energy reduction; environmental impact studies on aqueous effluents and atmospheric emissions. Chemicals and construction materials research: wood preservatives; salt research; organic chemicals; roofing systems; particleboard and resin impregnated paper laminates; gypsum technology.

Facilities: Pilot plant facilities for wood preparation, chemical and mechanical pulping, bleaching, fibre cleaning; high speed pilot paper coater; printing facilities to evaluate paper printing characteristics; wood

preserving pilot plant for pressure impregnation of wood with chemicals; acoustic laboratory for sound transmission tests on wall and floor/ceiling assemblies; environmental research facilities, mobile laboratory, fish toxicity and tainting, stack gas sampling equipment.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.

Language(s) in Which Services are Provided: both english and french.

**DOMUS SOFTWARE LIMITED**

303 Waverley St., Ottawa, Ontario, K2P 0V9.

**Information Systems**

Contact: Wendy Horne, Office Mgr, Tel: (613) 230-6285.

Personnel: Total is 2 of which none are scientists and engineers.

Activities: Software Research.

Facilities: Micro Computers.

Nature of Work Performed for Others: testing and analysis.

Language(s) in Which Services are Provided: english.

**DORSET INDUSTRIAL CHEMICALS LTD**

2725 Ford Boulevard, Industrial Park, Châteauguay, Québec, J6J 4Z2.

**Research Unit**

Admin. Contact: Ted H. Flaherty, President,  
Tel: (514) 691-9500.

Scientific Contact: Mohan A. Rao, Manager, Tech. Oper.,  
Tel: (514) 691-9500.

Personnel: Total is 3 of which 1 is a scientist or engineer.

Activities: Colloidal chemistry; dispersion technology; development of specialty chemicals mainly for the use in pulp and paper industry.

Facilities: Lab is equipped with infra-red spectroscopy; microscope and other regular lab equipment.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: english.

**DOW CHEMICAL CANADA INC.**

Modeland Road, Sarnia, Ontario, N7T 7K7.

**Modeland Centre R&D**

Admin. Contact: L.G. Rey, Administrative Services  
Manager, Tel: (519) 339-3618.

Scientific Contact: M.J. Baldwin, Research Director,  
Tel: (519) 339-3603.

Personnel: Total is 114 of which 99 are scientists and engineers.

Activities: Development of new and improved plastics and chemicals. Development of new applications for them and for existing products. Specializing in plastic foam insulation, cleaning and degreasing solvents, paper and textile coating latexes, herbicides, animal health products, moulding resins, plastic film, structural resins, epoxy resins, polyurethane chemicals.

Facilities: Injection and blow moulders; film extrusion line; polyurethane foam processing; engine coolant testing rigs; insulation testing; carpet coater.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: english.

**Sarnia Division R&D**

Vidal St. S., Sarnia, Ontario, N7T 7M1.

Admin. Contact: L.G. Rey, Administrative Services  
Manager, Tel: (519) 339-3618.

Scientific Contact: R.F. Wilson, Research Manager,  
Tel: (519) 339-3072.

Personnel: Total is 50 of which 45 are scientists and engineers.

Activities: Processing technology for improving the quality, yield, and economics of company products. Operation of pilot plants to evaluate and scale up processes.

Facilities: Full range of analytical equipment; electron microscope; process analyzer.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: english.

#### **Western Canada Division R&D**

Hwy 15, Fort Saskatchewan, Alberta, T8L 2P4.

Admin. Contact: L.G. Rey, Administrative Services Manager, Tel: (519) 339-3618.

Scientific Contact: A. Knight, Research Manager, Tel: (403) 998-8282.

Personnel: Total is 27 of which 22 are scientists and engineers.

Activities: Processing technology for improving the quality, yield, and economics of company products. Operation of pilot plants to evaluate and scale up processes.

Facilities: GC mass spectrometer; Emission spectrometer; Electrolysis cell test skid; Ethylene oxide show tube.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: english.

#### **DRG INC.**

1470 Don Mills R, Suite 301, Don Mills, Ontario, M3B 2X9.

#### **DRG FLEXIBLE PACKAGING DIVISION**

85 Liard Drive, Toronto, Ontario, M4G 3T8.

Contact: George Soos, Chief Chemist, Tel: (416) 421-1700.

Personnel: Total is 7 of which 2 are scientists and engineers.

Activities: Development of flexible packaging materials and pressure sensitive tapes.

Facilities: Gas chromatograph; Infra-red spectrophotometer; Humidity cabinets (for storage tests); Oxygen transmission; Moisture barrier tester; Instron - tensile, elongation and others.

Current or Potential Work Performed for: self or parent company.

Nature of Work Performed for Others: testing and analysis.

Language(s) in Which Services are Provided: english.

#### **DRILL SYSTEMS DIVISION OF DUALCO**

##### **MANUFACTURING LTD**

111-58th Ave S.W., Calgary, Alberta, T2H 0A3.

##### **Multi-Purpose Drill Rig**

Contact: Floyd Becker, Vice-President, Research and Development, Tel: (403) 253-7451.

Personnel: Total is 4 of which 4 are scientists and engineers.

Activities: Reverse circulation drilling; mineral exploration drill rigs.

Current or Potential Work Performed for: self or parent company, other clients.

Language(s) in Which Services are Provided: english.

#### **DSMA ATCON LTD**

4195 Dundas Street West, Toronto, Ontario, M8X 1Y4.

##### **Research Unit**

Admin. Contact: J.C. Lehman, Contracts Manager, Tel: (416) 239-3011.

Scientific Contact: L.C. Secord, President, Tel: (416) 239-3011.

Personnel: Total is 50 of which 20 are scientists and

engineers.

Activities: Industrial processes; special ventilation; model testing; pilot plants; transportation equipment; nuclear; environmental; instrumentation; aerospace vehicles; energy storage systems; alternate energy; remote handling equipment; dual fuel engines; air quality; microgravity research; robotics.

Facilities: Electronics laboratory; machine shop; photographic darkroom; metrology room.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.

Language(s) in Which Services are Provided: english.

#### **DU PONT CANADA INC.**

P O Box 2200-Streetsville Post Str, Mississauga, Ontario, L5M 2H3.

##### **Research Division**

P.O. Box 5000, Front Road, Kingston, Ontario, K7L 5A5.

Admin. Contact: G.B. Dyer, Manager, Research Division, Tel: (613) 544-6400.

Scientific Contact: D.G. Robinson, Manager, Planning and Administration, Tel: (613) 544-6400.

Personnel: Total is 155 of which 70 are scientists and engineers.

Activities: Chemicals, fibres, plastic research in processes and products.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: english.

#### **DURACELL INC.**

2333 North Sheridan Way, Mississauga, Ontario, L5K 1A7.

##### **Duracell Inc.; R&D Dept.**

Admin. Contact: R.J. Book, Director of R&D, Tel: (416) 823-4410.

Scientific Contact: S. Mohanta, Manager of Electrochemical Eng., Tel: (416) 823-4410.

Personnel: Total is 35 of which 8 are scientists and engineers.

Activities: Research and Development of primary alkaline cells and batteries. Fields of specialization are: electrochemical as applied to materials, processes, and analysis of functioning of primary cells and batteries; mechanical as applied to design and structure of containers, components, seals and vents of primary cells and batteries; and electrical/electronic/computers as applied to evaluation of electrical discharge performance of primary cells and batteries.

Facilities: Electrode making; cell assembly; cell testing; electrochemical analysis.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D.

Language(s) in Which Services are Provided: english.

#### **DY-4 SYSTEMS INC**

21 Credit Union Way, Nepean, Ontario, K2H 9G1.

##### **DY-4 Systems Engineering - Hardware and Software Development**

Admin. Contact: D. Osadca, Vice-President, Finance & Administration, Tel: (613) 596-9911.

Scientific Contact: Garry Dool, President, Tel: (613) 728-3711.

Personnel: Total is 30 of which 10 are scientists and engineers.

Activities: Electronics engineering relating to both hardware and software development of STDbus and VMEbus modules and systems. STD and VME are

industry standard (IEEE) bus architectures. All modules and systems are designed and manufactured in-house.  
Current or Potential Work Performed for: other clients.  
Nature of Work Performed for Others: contract R&D.  
Language(s) in Which Services are Provided: english.

#### **DYMAXION RESEARCH LIMITED**

5515 Cogswell Street, Halifax, Nova Scotia, B3J 1R2.

##### **Research Unit**

Admin. Contact: Robert Brown, Vice-President,

Tel: (902) 429-3175.

Scientific Contact: Dennis Misener, Software Development Manager, Tel: (902) 429-3175.

Personnel: Total is 24 of which 7 are scientists and engineers.

Activities: Develop and improve computer software techniques for management information systems. Specialize in simplifying means for management to control content, organization, format and timeliness of management information. Special focus on inventory, material requirements planning, accounting and activity management systems.

Facilities: DEC PDP 11/70 Computer; DEC VAX 11/750 Computer.

Current or Potential Work Performed for: other clients.

Nature of Work Performed for Others: contract R&D.

Language(s) in Which Services are Provided: english.

#### **DYNACON ENTERPRISES LTD**

18 Cherry Blossom Lane, Thornhill, Ontario, L4C 6P8.

##### **Research Unit**

Admin. Contact: Dr. Peter C. Hughes, President,

Tel: (416) 889-9260.

Scientific Contact: Dr. Glen B. Sincarsin, General Manager, Tel: (416) 889-9260.

Personnel: Total is 4 of which 3 are scientists and engineers.

Activities: The majority of R&D performed within Dynacon in the past, and at present, deals with the dynamics and control of spacecraft. In recent years, special emphasis has been placed upon structural dynamics and the impact of structural flexibility on the design of control systems for spacecraft. In this regard, a new initiative has been undertaken to complement our analytical and computational base. Our hardware experience has been greatly enhanced with the design and construction, by Dynacon, of the DAISY Control Testing Facility for the Communications Research Centre. Furthermore, ongoing control and system identification studies are serving to expand our competency in the areas of experimentation and testing. It should be stressed, however, that while our specialization is spacecraft dynamics and control, our expertise can be applied to many non-space applications. This potential is presently under review at Dynacon.

Facilities: Access to DAISY Control Laboratory

Current or Potential Work Performed for: government, other clients.

Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.

Language(s) in Which Services are Provided: english.

#### **E.D. SMITH AND SONS LTD.**

944 Highway 8, Winona, Ontario, L0R 2L0.

##### **Research Unit**

Contact: Mr. J. Pauls, Research and Development

Manager, Tel: (416) 643-1211.

Personnel: Total is 4 of which 3 are scientists and engineers.

Activities: Applied research for advancement of scientific knowledge relating to existing products and potential new products. The purpose is to make improvements to existing product quality through formula/process changes and to develop new products that can be marketed by the Company. Areas of specialization include: tomato products, pie fillings, jams, condiments, diet products, and fruit-vegetable juices.

Facilities: Pilot Plant Equipment Relating to existing Product Lines.

Current or Potential Work Performed for: self or parent company.

Nature of Work Performed for Others: consultation.

Language(s) in Which Services are Provided: english.

#### **E.J. FARACI AND ASSOCIATES LTD.**

200-330 St. Mary Avenue East, Winnipeg, Manitoba, R3C 3Z5.

##### **Research Division**

Admin. Contact: Gordon F. Shymko, P.Eng, Research

Manager, Tel: (204) 949-1000.

Scientific Contact: Gordon F. Shymko, Research Manager, Tel: (204) 949-1000.

Personnel: Total is 4 of which 4 are scientists and engineers.

Activities: Project management and academic support. Specialization in the following areas: Energy recovery and conservation; Alternate energy sources; Thermal analysis of structures; Passive solar design; Super window technology; Hydrogeology; Heat pump application.

Facilities: Subcontract lab facilities; mainframe computer capability.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.

Language(s) in Which Services are Provided: english.

#### **E.L. BRYENTON & ASSOCIATES INC (BRYTECH)**

Box 8823, Ottawa, Ontario, K1G 3J2.

##### **Research Unit**

203 Colonnade Rd, Nepean, Ontario, K2E 7L5.

Contact: E.L. Bryenton, President, Tel: (613) 733-2701.

Personnel: Total is 26 of which 12 are scientists and engineers.

Activities: Design, development and evaluation of terminal and transmission equipment for the telecommunication network. Design, development and manufacture of test equipment for the telecommunication and automotive industries. Research into man-machine interfaces for industry and the handicapped and development of specialized electronic equipment.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation.

Language(s) in Which Services are Provided: english.

#### **E.V.S. CONSULTANTS LTD.**

195 Pemberton Avenue, North Vancouver, British Columbia, V7P 2R4.

##### **Research Unit**

Contact: Dr. P.M. Chapman, Vice-President,

Tel: (604) 986-4331.

Personnel: Total is 15 of which 15 are scientists and engineers.

Activities: Biological and chemical studies related to environmental science. Areas of specialization include toxicology (aquatic bioassays in fresh and marine waters, using a variety of organisms), environmental chemistry (fate and effect studies), taxonomy (identification of

aquatic organisms including new species and genera), and aquatic ecology (community assemblages related to natural and anthropogenic influences).

Facilities: Marine laboratory; fresh-water laboratory; bacteriological laboratory; taxonomy laboratory; microscopes and lab equipment; hydrolab and field equipment.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D.

Language(s) in Which Services are Provided: english.

#### **ECO-RECHERCHE (CANADA) INC.**

121 Hymus Blvd., Pointe Claire, Quebec, H9R 1E6.

##### **Eco-Recherches - Microbiology Department**

Admin. Contact: Dr. André Dumouchel, President,  
Tel: (514) 697-3273.

Scientific Contact: Dr. Syed Shere, Project Director,  
Tel: (514) 697-3273.

Personnel: Total is 2 of which 1 is a scientist or engineer.

Activities: *Anabaena Variabilis* - a nitrogen fixing blue-green algae is being examined for its ability to fix atmospheric nitrogen in soil under varying conditions of temperature and moisture. Results obtained will demonstrate if the blue-green algae used as a biofertilizer is feasible under local climatic conditions in Quebec. Specialization areas: soil science, soil microbiology, wastewater treatment, agriculture.

Current or Potential Work Performed for: government, other clients.

Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.

Language(s) in Which Services are Provided: both english and french.

#### **ECO-TEC LIMITED**

925 Brock Road South, Pickering, Ontario, L1W 2X9.

##### **Eco-Tec Research and Development Department**

Admin. Contact: Craig J. Brown, Vice-President & General Manager, Tel: (416) 831-3400.

Scientific Contact: Cathy Fletcher, Laboratory Supervisor,  
Tel: (416) 831-3400.

Personnel: Total is 5 of which 2 are scientists and engineers.

Activities: The primary work performed in the R&D unit involves pilot plant scale ion exchange process evaluations. Chemical recovery, pollution abatement and water treatment applications are those most often studied. Process modification or optimization to ultimately produce a piece of full scale equipment for a specific customer's requirements is often the aim of experimentation. Ion exchange resin evaluation, bench scale waste treatment testing, and some contract analysis work is also done.

Facilities: Atomic absorption spectrophotometer; programmable microprocessor controlled ion exchange pilot plant; B&L spectronic 20 spectrophotometer; series of screens and shaker for particle size analysis.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: english.

#### **ECONOTECH SERVICES LIMITED**

852 Derwent Way, Annacis Island, New Westminster, British Columbia, V3M 5R1.

##### **Research Unit**

Contact: Dr. P.R. Thomas, Vice President,  
Tel: (604) 526-4221.

Personnel: Total is 23 of which 21 are scientists and engineers.

Activities: Pulp and paper all aspects; speciality pulps; environmental; chemical; forest products; byproducts.

Facilities: Pulping pilot plant; pulp bleaching equipment; pulp and paper testing equipment; analytical equipment; general pilot plant facilities; general laboratory facilities.

Current or Potential Work Performed for: self or parent company, government.

Nature of Work Performed for Others: contract R&D.

Language(s) in Which Services are Provided: english.

#### **EDO CANADA LTD**

8-6320 11 St. S.E., Calgary, Alberta, T2H 2L7.

##### **EDO Canada Product Development Dept.**

Admin. Contact: E. Ann Cox, Administrative Manager,  
Tel: (403) 255-6667.

Scientific Contact: Mr. Frank K. Wiskar, Manager,  
Tel: (403) 255-6667.

Personnel: Total is 10 of which 8 are scientists and engineers.

Activities: Integrated navigation systems - optimal filtering; adaptive, distributed microprocessor based systems; geodetic and marine satellite positioning receivers; marine navigation and positioning simulation; data acquisition systems for marine applications; marine interfaces; tactical military navigation systems. NOTE: Satellite positioning systems G.P.S. and transit.

Facilities: Navigation simulator on PDP 11/44; microprocessor development systems; PDP 11/44 and PDP 11/34 computers; temperature chambers; IBM PC's.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D.

Language(s) in Which Services are Provided: english.

#### **ELCORSY INC.**

4405 boulevard Poirier, St. Laurent, Québec, H4R 2A4.

##### **Research Unit**

Admin. Contact: M. Guy Castegnier, Directeur de recherche, Tel: (514) 337-6573.

Scientific Contact: M. Adrien Castegnier, Président,  
Tel: (514) 337-6573.

Personnel: Total is 10 of which 2 are scientists and engineers.

Activities: Electronic imagery: photocopiers, dynamic printing equipment by elcography; expertise in optical scanners, digital image reproduction systems, electronic circuitry, mechanical design, micro soldering.

Current or Potential Work Performed for: self or parent company.

Nature of Work Performed for Others: testing and analysis.

Language(s) in Which Services are Provided: french.

Note: Descriptive text has been translated from French.

#### **ELDORADO NUCLEAR LTD**

400-255 Albert Street, Ottawa, Ontario, K1P 6A9.

##### **Eldorado Resources Ltd., Research and Development**

Admin. Contact: Mr. D.J. McIntyre, Supervisor,  
Administrative Services, Tel: (613) 238-5222.

Scientific Contact: Dr. I.J. Itzkovitch, Manager, Research and Development, Tel: (613) 238-5222.

Personnel: Total is 49 of which 19 are scientists and engineers.

Activities: Research and development related to process and product improvement and development in the milling, refining and conversion of uranium to nuclear fuel. Fields of specialization: analytical - analyses and method development: for trace impurities, uranium and radionuclides; hydrometallurgy - leaching, solid/liquid separation, solvent extraction, precipitation;

pyrometallurgy - reduction, fluorination, ceramic powder production, pressing and sintering; mineralogy - uranium, gold and base metals.

Facilities: Scanning electron microscope; XRD, XRF; alpha spectroscopy; sintering furnace; dilatometer; fluorine cells.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: both english and french.

#### **ELECTRO-VOX INC.**

2626 chemin Bates, Montréal, Québec, H3S 1B2.

Département de design de produits

Contact: Paul Dorion, Chef du département,

Tel: (514) 731-3771.

Personnel: Total is 7 of which 2 are scientists and engineers.

Activities: Communication system; fire alarm system.

Facilities: Computer; workshop.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: both english and french.

Note: Descriptive text has been translated from French.

#### **ELECTRONIC SURVEILLANCE CORPORATION**

270 Ferrier Street, Markham, Ontario, L3R 2Z5.

Special Systems Development

Contact: Mr. Dale L. Pavs, Engineering Manager,

Tel: (416) 475-0552.

Personnel: Total is 7 of which 4 are scientists and engineers.

Activities: The Special Systems Development Unit conducts research and development in the area of real-time monitoring and control, especially in the fields of building and/or facilities management (including fire, security, environmental monitoring, access monitoring and control, etc.). Particularly as implemented with micro-computers linked in a local area network (LAN) system. Areas of specialization within this field include relational graphics, co-processing and distributed processing. The Special Systems Development Unit also conducts research and development in the area of computer-aided dispatch systems, especially as implemented on distrievied-processing architectures. Particular areas include specification writing and system bench-marking.

Facilities: ARCHNET System; ESC 6500 and 7500 Systems; P.I.G.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.

Language(s) in Which Services are Provided: english.

#### **ELI LILLY CANADA INC**

3650 Danforth Avenue, Scarborough, Ontario, M1N 2E8.

Elanco, Agricultural Chemical Research

5-1249 Clarence Avenue, Winnipeg, Manitoba, R3T 1T4.

Admin. Contact: Dr. Jon Anderson, Manager, Plant Sci.

Research, Tel: (416) 694-3221.

Scientific Contact: J.R. Anderson, Manager, Plant Sci.

Research, Tel: (204) 284-0422.

Personnel: Total is 12 of which 12 are scientists and engineers.

Activities: Formulation development; new pesticide field evaluation; evaluation of existing pesticides for new applications; evaluation of agronomic practices

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: english.

#### **Elanco, Animal Health**

1020 Hargrieve Rd, London, Ontario, N6E 1P5.

Admin. Contact: Dr. R.F. McManus, Manager of

Regulatory Affairs & Research Facilities,

Tel: (519) 681-5261.

Scientific Contact: R.F. McManus, Mgr, Regulatory Affairs & Research Facilities, Tel: (519) 681-5261.

Personnel: Total is 5 of which 3 are scientists and engineers.

Activities: Evaluation of feed additives; veterinary pharmaceutical research and development.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: english.

#### **EMERY INTERNATIONAL DEVELOPMENTS LIMITED**

3409 Yonge Street, Toronto, Ontario, M4N 2M8.

R&D Laboratory

Contact: John R. Emery, Vice-president,

Tel: (416) 481-5677.

Personnel: Total is 6 of which 3 are scientists and engineers.

Activities: Pulp Moulding and specialized machinery and products and materials.

Facilities: Pulp Moulding Machine; Hot Press;

Current or Potential Work Performed for: self or parent company, other clients.

Nature of Work Performed for Others: contract R&D, testing and analysis.

Language(s) in Which Services are Provided: english.

#### **EMHART CANADA LIMITEE, DIVISION BOSTIK**

2610 avenue Bennett, Montréal, Québec, H1V 2T8.

Laboratoire Bostik

Admin. Contact: R. Gaudreault, Directeur général,

Tel: (514) 255-3631.

Scientific Contact: D.A. Zervos, Directeur technique,

Tel: (514) 255-3631.

Personnel: Total is 9 of which 7 are scientists and engineers.

Activities: R&D activities pertain mainly to the following: modernization of the existing range of products; development of new products and modification of existing products to meet a client's specific needs; and development of products with the hope of introducing them to an as-yet undeveloped market. Fields of specialization: epoxy systems (with solvent base, 100% active ingredients), hot melt adhesives, special adhesives for use in the construction industry, and products for sealing double glazing.

Facilities: Infrared spectrophotometer; infrared data station; and Instron, a universal test instrument.

Current or Potential Work Performed for: other clients.

Nature of Work Performed for Others: testing and analysis.

Language(s) in Which Services are Provided: both english and french.

Note: Descriptive text has been translated from French.

#### **ENERMODAL ENGINEERING LIMITED**

Unit 2, 368 Phillip Street, Waterloo, Ontario, N2L 5J1.

Research Unit

Contact: Stephen C. Carpenter, President,

Tel: (519) 884-6421.

Personnel: Total is 5 of which 2 are scientists and engineers.

Activities: Computer modelling and analysis of heat transfer and energy, specifically in energy conservation and passive and active solar energy; mechanical design focussing on energy conservation, solar energy; energy audits; development of engineering computer software.

Facilities: One multi-user WICAT mini-computer.  
IBM-PC  
Current or Potential Work Performed for: self or parent company, government, other clients.  
Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.  
Language(s) in Which Services are Provided: english.

#### **ENERSHADE**

40 Norwich Ste E, Guelph, Ontario, N1H 2G6.

##### **Window Treatments**

Contact: Nancy Coates, President, Tel: (519) 821-8998.  
Personnel: Total is 3 of which 1 is a scientist or engineer.  
Activities: Design and development of window treatments which provide insulation against conductive and radiation heat losses through window glass. Design and development of window treatments for inclined surfaces (ie. skylights).  
Current or Potential Work Performed for: self or parent company.  
Language(s) in Which Services are Provided: english.

#### **ENGINEERING INTERFACE LIMITED**

Suite 200, 2 Sheppard Avenue East, Willowdale, Ontario, M2N 5Y7.

##### **Research Unit**

Admin. Contact: B.T. Tambllyn, President,  
Tel: (416) 226-6565.  
Scientific Contact: Tom Tambllyn, President,  
Tel: (416) 226-6565.  
Personnel: Total is 23 of which 10 are scientists and engineers.  
Activities: Software development for energy analysis in buildings. Thermal storage research.  
Facilities: Computers.  
Current or Potential Work Performed for: self or parent company.  
Nature of Work Performed for Others: contract R&D, testing and analysis.  
Language(s) in Which Services are Provided: english.

#### **ENGINEERING RESEARCH ASSOCIATES - A DIVISION OF TENNYSON, HANSEN, MABSON AND UFFEN ASSOCIATES LIMITED**

5 Framingham Drive, Thornhill, Ontario, L3T 4H2.

##### **Research Unit**

Admin. Contact: J.S. Hansen, President,  
Tel: (416) 667-7701.  
Scientific Contact: G.E. Mabson, Research Engineer,  
Tel: (416) 667-7701.  
Personnel: Total is 5 of which 5 are scientists and engineers.  
Activities: Aerospace related materials and structures research including experimental.  
Facilities: Composite material manufacturing equipment; materials and structures test equipment; strain gauge instrumentation; computer facilities; space simulation chambers; laser interferometer.  
Current or Potential Work Performed for: self or parent company, government, other clients.  
Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.  
Language(s) in Which Services are Provided: english.

#### **ENGLEHARD INDUSTRIES OF CANADA LTD**

P.O. Box 340, 100 Englehard Drive, Aurora, Ontario, L4G 3N1.

#### **Environmental Group**

Contact: T.M. Halahel, V.P. Marketing/Sales,  
Tel: (416) 727-3191.  
Personnel: Total is 3 of which 3 are scientists and engineers.  
Activities: Water effluent; air emissions; volatile compounds, NOx carbon monoxide, etc.  
Current or Potential Work Performed for: self or parent company, other clients.  
Nature of Work Performed for Others: contract R&D, testing and analysis.  
Language(s) in Which Services are Provided: english.

#### **Electro-Chemistry**

Contact: T.M. Halahel, V.P. Marketing/Sales,  
Tel: (416) 727-3191.  
Personnel: Total is 4 of which 2 are scientists and engineers.  
Activities: Plating of Gold, Silver, Rhodium, Platinum, Palladium, Base Metals.  
Current or Potential Work Performed for: self or parent company, other clients.  
Nature of Work Performed for Others: contract R&D, testing and analysis.  
Language(s) in Which Services are Provided: english.

#### **EPIX INC.**

1120 rue Cherbourg, Sherbrooke, Québec, J1K 2N8.

##### **Research Unit**

Bureau 503, 1851 rue Sherbrooke, Montréal, Québec, H2K 4L5.  
Admin. Contact: Marc Gagnon, Président,  
Tel: (514) 527-1215.  
Scientific Contact: Michel Turcotte, Vice-président,  
Tel: (514) 527-1215.  
Personnel: Total is 5 of which 2 are scientists and engineers.  
Activities: Industrial engineering; new energy sources; transportation; management information systems; software; fourth-generation language; applications generator for PC, Mini, PC36, and Mini 36 computers; airport management; hydro-electric management.  
Facilities: Data processing.  
Current or Potential Work Performed for: self or parent company, government, other clients.  
Nature of Work Performed for Others: contract R&D.  
Language(s) in Which Services are Provided: french.  
Note: Descriptive text has been translated from French.

#### **ERCO, DIVISION OF TENNECO CANADA INC**

2 Gibbs Road, Islington, Ontario, M9B 1R1.

##### **Research & Development Department**

Contact: Dr. J.D. McGilvery, Manager R&D,  
Tel: (416) 239-7111.  
Personnel: Total is 27 of which 14 are scientists and engineers.  
Activities: Electrochemistry with special reference to the electrolysis of brine to make sodium chlorate. Technology for the generation of chlorine dioxide. Inorganic phosphorus/phosphate chemistry.  
Facilities: Ion chromatograph; AA spectrophotometer.  
Current or Potential Work Performed for: self or parent company.  
Nature of Work Performed for Others: testing and analysis.  
Language(s) in Which Services are Provided: english.

#### **ERNST LEITZ CANADA LTD.**

328 Ellen Street, Midland, Ontario, L4R 2H2.

#### Research Unit

Admin. Contact: D. Stephenson, Director of Marketing and Commercial Operations, Tel: (705) 526-5401.

Scientific Contact: H. Witt, Vice-President & Engineering, Tel: (705) 526-5401.

Personnel: Total is 25 of which 15 are scientists and engineers.

Activities: Optical design; optical/mechanical instrumentation; optical coatings; IR optics; MTF measurement; computerized interferometry. Leitz has the capability and capacity to a design, starting from customer specification to the qualification of a product, including the manufacture of a prototype and later to pressure with the production.

Facilities: EROS MTF equipment; TROPEL interferometer; LEITZ 3 axis measuring machine; environmental test chambers.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D.

Language(s) in Which Services are Provided: english.

#### ESSA ENVIRONMENTAL AND SOCIAL SYSTEMS

P.O. Box 12155, Nelson Square, 705-808 Nelson Street, Vancouver, British Columbia, V6Z 2H2.

#### ESSA Environmental and Social Systems Analysts

Admin. Contact: J. Zdenek, Administrator, Tel: (604) 689-2912.

Scientific Contact: T.M. Webb, Partner, Tel: (604) 689-2912.

Personnel: Total is 12 of which 10 are scientists and engineers.

Activities: ESSA provides a wide range of analytical and synthesising support to its clients in the field of resource management. This support is concentrated in the areas of: statistical and analytical; synthesis and planning; and communications of results. Statistical and analytical work centers on data analysis and experimental design; applications are frequently innovative and simulation models including monte carlo methods are used frequently planning and synthesis at both the strategic and research levels is facilitated through the use of AEAM workshops, communications packages including slide tape shows are used to present results.

Facilities: Spectrix 10 super micro computer.

Current or Potential Work Performed for: government, other clients.

Nature of Work Performed for Others: contract R&D, consultation.

Language(s) in Which Services are Provided: english.

#### ETHICON SUTURES LTD.

1421 Lansdowne Street West, Peterborough, Ontario, K9J 7B9.

#### Ethicon Ltd. - Research and Development Division

Contact: Martin Stephenson, Ph.D., Director of Research, Tel: (705) 743-2220.

Personnel: Total is 9 of which 5 are scientists and engineers.

Activities: New product R&D with special emphasis on new biomaterials of interest in wound closure.

Facilities: High Pressure Liquid Chromatograph; Gas Chromatographs; High Speed Centrifuge; Equipment for preparing Wax, frozen and plastic histology sections; Microscopes (Light); I.R., U.V. and Visible Spectro Photometers; Osmometer; Aggregometer (Payton).

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: english.

#### EVANS COMPUTER APPLICATIONS LTD

6424 Norwood Street, Halifax, Nova Scotia, B3H 2L3.

#### Research Unit

Contact: Valerie Evans, President, Tel: (902) 422-6378.

Personnel: Total is 6 of which 5 are scientists and engineers.

Activities: Scientific computer system development.

Current or Potential Work Performed for: government.

Nature of Work Performed for Others: contract R&D.

Language(s) in Which Services are Provided: both english and french.

#### EXELTOR INC

P.O. Box 1500, 110 River Street, Bedford, Quebec, J0J 1A0.

#### Research Unit

Admin. Contact: G.G. Lemire, Vice-President

Manufacturing, Tel: (514) 248-4343.

Scientific Contact: P.P. Beauchamp, Chief Engineer, Tel: (514) 248-4343.

Personnel: Total is 14 of which 5 are scientists and engineers.

Activities: Research on precision heat-treating of long, slender parts to minimize their distortion. Research on optimum raw material (steel) to resist jointly fatigue and wear. Research on localized heat-treating of steel parts to resist highly abrasive application. Design, testing and assembling of machinery to fabricate metal parts. Research on heat-treating methods. Research on improving existing methods of fabrication of metal parts and to reduce manufacturing costs. Research on improving quality of products manufactured and to shorten manufacturing lead-time without prejudice to quality. Research for diversification - for designing and developing new manufacturing methods and new products. Research to find new products to fabricate.

Facilities: Small microscope (1000 X); hardness tester and metallurgical laboratory equipment; tensile strength tester (to come); fatigue testers (home-made); wear tester (home-made).

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: both english and french.

#### EYECORP LTD

60 Bloor Street West, Suite 705, Toronto, Ontario, M4W 3B8.

#### Research Unit

Contact: Dr. J.E. Josephson, President,

Tel: (416) 961-6671.

Personnel: Total is 4 of which 3 are scientists and engineers.

Activities: Ocular immunological response to contact lenses; contact lens design research; methods of analyses of the precocular tear film; development of ophthalmic solutions to reduce symptoms of dryness.

Facilities: High resolution video-biomicroscope; Holden-Zantos-Photobiomicroscope set up; electronic digital pachometer.

Current or Potential Work Performed for: self or parent company, other clients.

Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.

Language(s) in Which Services are Provided: english.

#### F.T. GERSON LIMITED

55 Queen Street East, Toronto, Ontario, M5C 1R6.

#### Research Unit

Contact: F.T. Gerson, President, Tel: (416) 364-2457.

Personnel: Total is 3 of which 2 are scientists and engineers.

Activities: Consulting engineers specializing in metallurgy and materials science. Established 1960, design and characterization of new alloys, compositions and processes metals and plastics. Funding, launch and supervision of programs, feasibility studies, evaluation and settlement of claims.

Current or Potential Work Performed for: self or parent company, other clients.

Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.

Language(s) in Which Services are Provided: english.

#### **FARMATIC INC**

45 Meg Drive, London, Ontario, N6E 2V2.

##### **Research Unit**

Contact: Eric Jarman, President, Tel: (519) 686-7881.

Personnel: Total is 5 of which 2 are scientists and engineers.

Activities: Research and development of high tech on farm feed processing and materials handling systems for the automatic feeding of livestock and poultry.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: english.

#### **FARRINGTON, LOCKWOOD COMPANY LTD**

P.O. Box 6797, Station J, Ottawa, Ontario, K2A 3Z4.

##### **Research Unit**

Contact: Michael Farrington, Research chemist,  
Tel: (613) 226-7314.

Personnel: Total is 5 of which 4 are scientists and engineers.

Activities: Chemical research on a contract basis for government and private sector organizations; clients have chemically related problems but lack the required in-house resources to perform their own R&D; company research expertise is diverse; recent specialization includes: lithium-thionyl chloride battery chemistry, lithium-sulfur dioxide battery chemistry, aviation gas turbine fuel analysis techniques, analysis techniques for toxic organics in ground water; present research involves: gas chromatography (GC), gas chromatography/, computer programming/interfacing, standard wet chemical analysis, vacuum and controlled atmospheres apparatus; recent addition of ion chromatography (IC) and HPLC instrumentation.

Current or Potential Work Performed for: government, other clients.

Nature of Work Performed for Others: contract R&D, testing and analysis.

Language(s) in Which Services are Provided: english.

#### **FEDERAL PIONEER LIMITED**

19 Waterman Avenue, Toronto, Ontario, M4B 1Y2.

##### **Corporate R&D**

Contact: C.A.A. MacPhee, Vice-President,  
Tel: (416) 752-8020.

Personnel: Total is 38 of which 18 are scientists and engineers.

Activities: Miniature air circuit breakers; 600 volt air circuit breakers; medium voltage metalclad gear; transformers; solid state relays; solid state controls; electric heat devices; bus duct.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: english.

#### **FIBERGLAS CANADA INC.**

3080 Yonge Street, Toronto, Ontario, M4N 3N1.

#### **Research & Insulation Development**

Technical Centre, P.O. Box 3005, Sarnia, Ontario, N7T 7M6.

Admin. Contact: Howard J. Bartlett, Manager,  
Administration & New Business Development;  
Tel: (519) 344-7461.

Scientific Contact: D.J. Holden, Manager, Research & Insulation Development, Tel: (519) 344-7461.

Personnel: Total is 70 of which 33 are scientists and engineers.

Activities: This laboratory is involved with the development of thermal and acoustical insulation products and energy conservation systems, and the processes to produce these products. In addition, they carry on research and development on the various chemical products used within Fiberglas Canada and on polyester resins and resin systems.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: english.

#### **Textile & Reinforcing Products Development**

247 York Road, Guelph, Ontario, N1H 6P6.

Admin. Contact: Howard J. Bartlett, Manager,  
Administration & New Business Development,  
Tel: (519) 344-7461.

Scientific Contact: Frank Golemba, Manager, Textile & Reinforcing Products Development, Tel: (519) 824-0120.

Personnel: Total is 24 of which 10 are scientists and engineers.

Activities: This laboratory is responsible for the development of applications for fiberglass reinforced materials and for the introduction, to our customers, of new fabrication technology for FRM. Furthermore, it is responsible for the improvement and development of new processes for the forming of glass reinforcement products.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: english.

#### **FIRST SPICE MANUFACTURING CORPORATION CANADA LTD**

98 Tycos Drive, Toronto, Ontario, M6B 1V9.

##### **Research Unit**

Contact: Julie Schlosser, General Manager,  
Tel: (416) 787-1201.

Personnel: Total is 2 of which 2 are scientists and engineers.

Activities: We specialize in product development for the meat processing industry by developing new products as well as improving existing formulas for our binders, cure and seasoning mixes. We also serve as industrial processing consultants. For example, we advise meat packers on large capital purchases as well as helping to eliminate processing problems.

Facilities: The laboratory is equipped with pilot plant meat processing equipment. We also possess the necessary equipment to perform protein, dextrose, nitrite, phosphate, fat, ash, calcium, peroxide value and TBA value tests.

Current or Potential Work Performed for: self or parent company, other clients.

Nature of Work Performed for Others: consultation, testing and analysis.

Language(s) in Which Services are Provided: both english and french.

#### **FLEXI-COIL LTD.**

PO Box 1928, Saskatoon, Saskatchewan, S7K 3S5.

**R&D Department**

Admin. Contact: Mr. G.S. Pask, Plant Manager,  
Tel: (306) 934-3500.  
Scientific Contact: R. Memory, Manager, R&D,  
Tel: (306) 934-3500.  
Personnel: Total is 15 of which 4 are scientists and  
engineers.  
Activities: Agricultural equipment; tillage; seeding;  
spraying.  
Current or Potential Work Performed for: self or parent  
company, government.  
Language(s) in Which Services are Provided: english.

**FOCAL MARINE LIMITED**

1378 Bedford Highway, Bedford, Nova Scotia, B4A 1E2.

**Research Unit**

Admin. Contact: Graham Smith, Executive Manager,  
Tel: (902) 835-1217.  
Scientific Contact: Dr. Barry Paton, Senior Scientist,  
Tel: (902) 835-1217.  
Personnel: Total is 7 of which 6 are scientists and  
engineers.  
Activities: Devices to carry optical data through rotating  
interfaces (fibre optic sliprings). Flow measurement  
(optically) by Doffler. Flow measurement (optically) by  
Dual beam interference. Marine fouling (algae etc).  
Effects of saltwater environment on fibre optic devices  
(connectors, penetrators, etc).  
Facilities: Optical multimeters; optical waveform generator;  
fusion splicer; OTDR (shortly).  
Current or Potential Work Performed for: self or parent  
company, government, other clients.  
Nature of Work Performed for Others: contract R&D,  
consultation, testing and analysis.  
Language(s) in Which Services are Provided: english.

**FOREST ENGINEERING RESEARCH INSTITUTE OF  
CANADA**

143 Place Frontenac, Pointe Claire, Québec, H9R 4Z7.

**Forest Engineering Research Institute of Canada (Eastern  
Division)**

Contact: D. Briere, Manager, Tel: (514) 694-1140.  
Personnel: Total is 27 of which 16 are scientists and  
engineers.  
Activities: Field oriented activities aimed at improving the  
efficiency of wood harvesting operations. Major areas of  
work include extraction, processing, and transportation  
of wood; and mechanization of silvicultural operations.  
Current or Potential Work Performed for: self or parent  
company, government.  
Nature of Work Performed for Others: contract R&D.  
Language(s) in Which Services are Provided: both english  
and french.

**Forest Engineering Research Institute of Canada (Western  
Division)**

Suite 201, 2112 West Broadway, Vancouver, British  
Columbia, V6K 2C8.  
Contact: G.V. Wellburn, Manager, Tel: (604) 732-3711.  
Personnel: Total is 23 of which 14 are scientists and  
engineers.  
Activities: Field oriented activities aimed at improving the  
efficiency of wood harvesting operations. Major areas of  
work include extraction, processing, and transportation  
of wood and mechanization of silvicultural operations.  
Current or Potential Work Performed for: self or parent  
company, government.  
Nature of Work Performed for Others: contract R&D.  
Language(s) in Which Services are Provided: english.

**FORINTEK CANADA CORP.**

6620 Marine Drive North West, Vancouver, British  
Columbia, V6T 1X2.

**Forintek Canada Corp; Western Region Division**

Admin. Contact: L.D. Scott, Manager, Administration,  
Tel: (604) 224-3221.  
Scientific Contact: Mr. R.W. Stephens, Regional Director,  
Tel: (604) 224-3221.  
Personnel: Total is 55 of which 30 are scientists and  
engineers.  
Activities: Lumber manufacturing technology; wood  
engineering; wood protection/preservation; wood  
composites (Plywood-Veneer) \*Forintek is the national  
wood products research institute in Canada.  
Facilities: Veneer line; Saw grinding line.  
Current or Potential Work Performed for: self or parent  
company, government, other clients.  
Nature of Work Performed for Others: contract R&D,  
consultation, testing and analysis.  
Language(s) in Which Services are Provided: both english  
and french.

**Forintek Canada Corp; Eastern Region Division**

800 Montreal Road, Ottawa, Ontario, K1G 3Z5.

Admin. Contact: L. Koiv, Manager, Administration,  
Tel: (613) 744-0963.

Scientific Contact: Mr. J. Carette, Regional Director,  
Tel: (613) 744-0963.

Personnel: Total is 74 of which 50 are scientists and  
engineers.

Activities: Lumber manufacturing technology; building  
construction technology; wood composites (reconstituted  
wood products); biotechnology; wood materials  
testing/quality assurance; secondary manufacturing  
(furniture, windows, doors, pallets); treated wood  
technology; \*Forintek is the national wood products  
research institute in Canada.

Facilities: sawmilling line; waterboard line; particleboard  
line.

Current or Potential Work Performed for: self or parent  
company, government, other clients.

Nature of Work Performed for Others: contract R&D,  
consultation, testing and analysis.

Language(s) in Which Services are Provided: both english  
and french.

**Forintek Canada Corp - National Programs Division**

Admin. Contact: L.D. Scott, Manager, Administration,  
Tel: (604) 224-3221.

Scientific Contact: J.A. Dangerfield, Director,  
Tel: (604) 224-3221.

Personnel: Total is 51 of which 40 are scientists and  
engineers.

Activities: Biotechnology; wood chemistry; wood  
engineering; wood science; wood products economics  
and market research.

Facilities: Steam gun; continuous hydrolisis process;  
strength frames; software development.

Current or Potential Work Performed for: self or parent  
company, government, other clients.

Nature of Work Performed for Others: contract R&D,  
consultation, testing and analysis.

Language(s) in Which Services are Provided: both english  
and french.

**FOSTER WHEELER LIMITED**

P.O. Box 3007, St. Catharines, Ontario, L2R 7B7.

**Research and Development**

Admin. Contact: Peter J. Adams, Vice-President,  
Tel: (416) 688-4434.

Scientific Contact: Robert H. Renshaw, Vice-President,  
Technology Application, Tel: (416) 688-4434.

Personnel: Total is 3 of which 3 are scientists and engineers.

Activities: Related to welding and heavy metal manufacturing; related to heat transfer equipment development; related to combustion technology; new product development.

Facilities: Specialty computers and programs; welding lab.  
Current or Potential Work Performed for: self or parent company, government.

Language(s) in Which Services are Provided: english.

#### **FRANK MAINE CONSULTING LTD**

71 Sherwood Drive, Guelph, Ontario, N1E 6E6.

##### **Research Unit**

Contact: Dr. F.W. Maine, President, Tel: (519) 823-1465.

Personnel: Total is 3 of which 3 are scientists and engineers.

Activities: Microcomputer applications to small business: In R&D laboratories. In Electronic Mail. Biotechnology: High value added chemicals from peat. Amino acids, Enzymes - separation by membranes. Agriculture/Forestry applications.

Facilities: Ten microcomputers.

Current or Potential Work Performed for: self or parent company, government.

Nature of Work Performed for Others: consultation.

Language(s) in Which Services are Provided: english.

#### **FRANK W HORNER LTD**

5485 Ferrier Street, Montreal, Quebec, H4P 1M2.

##### **R&D Unit**

Contact: Dr. Dennis Jones, Director R&D/QC,  
Tel: (514) 731-3931.

Personnel: Total is 47 of which 23 are scientists and engineers.

Activities: Development of analytical methodology for substances with biological activity evaluation of physicochemical properties of drug substances and excipients. Development of pharmaceutical formulations with specific release characteristics. Scaling-up research findings to production scale. Development of methodology for clinical evaluation of new drugs or new formulations. Analytical, pharmaceutical and clinical development of specific drug entities. Development of diagnostic tests based on immunological principles.

Facilities: Pilot scale tablet presses and liquid handling facilities; Full range of analytical equipment.

Current or Potential Work Performed for: self or parent company, other clients.

Nature of Work Performed for Others: consultation, testing and analysis.

Language(s) in Which Services are Provided: both english and french.

#### **FRASER INC.**

27 Rice Street, Edmundston, N.B., E3V 1S9.

##### **Fraser Inc., Central Technical Dept.**

Contact: W.D. Kerr, Vice-President, Technology,  
Tel: (506) 735-5551.

Personnel: Total is 35 of which 18 are scientists and engineers.

Activities: Pulping of wood fiber; bleaching of wood fiber; coating of paper; environmental and resource recovery in pulp and paper manufacture; development of paper products.

Facilities: Lab scale coater; pulp and paper evaluation equipment.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: english.

#### **FRC COMPOSITES LTD**

1993 Leslie Street, Toronto, Ontario, M3B 2M3.

##### **FRC Research and Development Group**

Admin. Contact: Ergo Karuks, President,  
Tel: (416) 449-1405.

Scientific Contact: Marco Ferrara/Tim Hayes, Research Engineers, Tel: (416) 449-1405.

Personnel: Total is 5 of which 4 are scientists and engineers.

Activities: Fibre reinforced cementitious materials; polymer modified concrete; corrosion protection of steel; pipe coatings; sealers; waterproofing materials; asbestos encapsulants.

Facilities: Tension/compression tester; impact tester/adhesion tester; freeze/thaw; environmental chamber; spray equipment/booth; water/vapour permeability; temperature studies.

Current or Potential Work Performed for: self or parent company.

Nature of Work Performed for Others: testing and analysis.

Language(s) in Which Services are Provided: english.

#### **FUNDY ISLES MARINE ENTERPRISES LTD**

14 Montague Street, St. Andrews, New Brunswick, E0G 2X0.

##### **Research Unit**

Contact: Chris Frantsi, President, Tel: (506) 529-3270.

Personnel: Total is 10 of which 5 are scientists and engineers.

Activities: Biological; aquaculture - development of shellfish culture systems; marine fouling - on offshore structures - predictive and analysis; shellfish purification - design and evaluation of systems; bacteriology - as related to shellfish; parasitology - identification of fish stocks using parasite profiles; plankton - surveys of ichthyoplankton and zooplankton.

Facilities: Bacteriology laboratory; microscopes; dissecting equipment; marine aquaculture site and rafts; barge and crane; boats.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.

Language(s) in Which Services are Provided: english.

#### **FUNK SEEDS CIBA-GEIGY CANADA LTD.**

P.O. Box 29, Hyde Park, Ontario, N0M 1Z0.

##### **Funk Seeds Research**

Admin. Contact: Mr. Tom Schmidt, General Manager,  
Tel: (519) 473-2651.

Scientific Contact: Dr. Tom Wilson, Corn Breeder,  
Tel: (519) 473-2651.

Personnel: Total is 6 of which 2 are scientists and engineers.

Activities: Elite germplasm sources are created to be used in the development of experimental hybrids that will demonstrate good agronomic performance in the various corn producing areas of Canada. Superior hybrids are identified by an extensive testing program and are then submitted to provincial licensing trials.

Facilities: Customized Planter; Customized combine; Seed counter; Seeds storage vault; Electric sheller.

Current or Potential Work Performed for: self or parent company.

Nature of Work Performed for Others: testing and analysis.

Language(s) in Which Services are Provided: english.

**G.A. GRANT SCIENTIFIC CONSULTANTS LIMITED**

46 Crystal Beach Drive, Nepean, Ontario, K2H 5M9.

**Research Unit**

Contact: G.A. Grant, President, Tel: (613) 828-0845.

Personnel: Total is 5 of which 3 are scientists and engineers.

Activities: Development of a new safe sensory agent for use by military and police establishments. Toxicological studies and design of dispersal systems. Design of systems for production of filter systems for toxic gases.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.

Language(s) in Which Services are Provided: english.

**G.H. WOOD & CO. LTD**

P.O. Box 34, 45 Zorra Street, Toronto, Ontario, M8Z 5M8.

**Laboratory**

Contact: Mr. Peter Sharpe, Manager, Laboratory Operations, Tel: (416) 259-2321.

Personnel: Total is 7 of which 6 are scientists and engineers.

Activities: Research & development of products and systems to control the growth of or to kill microbes on the skin or on inanimate hard surfaces; research & development of products and systems for building maintenance to clean and protect hard surfaces; research & development of products to control odours.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: english.

**GALCO FOOD PRODUCTS LIMITED**

318 Orenda Road, Brampton, Ontario, L6T 1G1.

**Research Unit**

Contact: BOCK H. LEE, MANAGER, RESEARCH & Q.A., Tel: (416) 793-5757.

Personnel: Total is 2 of which 2 are scientists and engineers.

Activities: New product development in field of poultry meat processing; Plant processing development.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: english.

**GANDALF DATA LTD**

Gandalf Technologies Inc., 33 John St., Manotick, Ontario, K0A 2N0.

**Gandalf Data Ltd - Product Development**

9 Slack Road, Nepean, Ontario, K2G 0B7.

Admin. Contact: Mr. Jan Bartl, Vice President of Product Development, Tel: (613) 225-0565.

Scientific Contact: Brian Penney, Director, Design Strategy, Tel: (613) 225-0565.

Personnel: Total is 150 of which 50 are scientists and engineers.

Activities: Research carried out at this site includes product directed research in the following areas of data communications: centralized circuit switched data networks; statistical multiplexing; packet network design; limited distance modem design; digital signal processing; time division multiplexing; radio modem and mobile terminal dispatch systems.

Facilities: Various specialized equipments.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: both english and french.

**GARRETT MANUFACTURING LIMITED**

255 Attwell Drive, Rexdale, Ontario, M9W 5B8.

**Research Unit**

Contact: R.J. Richardson, Chief Engineer,

Tel: (416) 675-1411.

Personnel: Total is 180 of which 120 are scientists and engineers.

Activities: Microcircuits - thin/thick film hybrids, power hybrids, communication hybrids. Environmental electronic controls - advanced control systems for commercial/military aerospace market. Optics - peripheral vision display systems, holographic solutions to display problems, fiber optics. Communications - EMI testing, design of transmitters/receivers, tempest testing, emergency locator beacons.

Facilities: Screen rooms; Vax II computer; CAD/CAM; flow facility.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.

Language(s) in Which Services are Provided: english.

**GASTOPS LIMITED**

1011 Polytek Street, Gloucester, Ontario, K1J 8Z1.

**Research Unit**

Admin. Contact: Gordon MacIsaac, Treasurer, Tel: (613) 744-3530.

Scientific Contact: Bernard D. MacIsaac, President, Tel: (613) 744-3530.

Personnel: Total is 15 of which 12 are scientists and engineers.

Activities: GASTOPS Ltd. was incorporated in 1979 to provide engineering services in a number of areas: One of the primary areas of endeavour of GASTOPS Ltd. is in the field of gas turbine and other propulsion systems. These services range from feasibility studies through to design and design evaluations with specific emphasis on performance and controls; GASTOPS Ltd. has extensive experience in computer simulation and systems engineering. The company offers specialist assistance to clients in the planning, development and use of computer simulations, usually in the context of engineering of large and small scale mechanical and aerospace systems; The company has strong expertise in the area of fluid mechanics, heat transfer and thermodynamics. This enables the company to offer specialist services in these areas and provide in-depth support of its endeavours in mechanical and aerospace systems simulation; Members of the company have close personal contacts with several laboratories at the National Research Council (NRC) and with the Department of Mechanical and Aeronautical Engineering at Carleton University. Laboratory facilities at these institutions are available for use by the company; In summary, the company has the capability to offer professional engineering services in the areas of: Propulsion systems engineering; mechanical systems simulation; aerospace systems engineering; fluid mechanics, heat transfer and thermodynamics; engineering data analysis.

Facilities: Computer.

Current or Potential Work Performed for: government.

Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.

Language(s) in Which Services are Provided: english.

**GAY LEA FOODS COOPERATIVE LTD**

100 Clayson Road, Weston, Ontario, M9M 2G7.

### **Quality Assurance and Product Development**

21 Speedvale Avenue West, Guelph, Ontario, N1H 6J6.

Contact: Allan Chia, Director, Quality Assurance & Product Development, Tel: (519) 822-5530.

Personnel: Total is 3 of which 3 are scientists and engineers.

Activities: Vitamin A Analysis by HPLC and Carr-Price Methods; product development and improvement for: yogurt, yogurt fruit, chip dip, cottage cheese, salad dressings, dairy desserts - cheese cake, whipped topping, ice cream mix, dairy spreads, margarine, fortification of skim milk powder with vitamins A and D; custom spray drying; certified lab for skim milk powder analysis.

Facilities: Waters Scientific HPLC; Pye-Unicon GLC, UV spectrophotometer; pilot plant evaporator and swept surface heat exchanger; anhydro spray dryer (20-30 lbs. product/hr); New Brunswick Scientific Fermentor; lab homogenizer/viscubator/ice cream freezer.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.

Language(s) in Which Services are Provided: english.

### **GEAC COMPUTERS INTERNATIONAL INC**

350 Steelcase Road West, Markham, Ontario, L3R 1B3.

#### **Computer Systems Division**

70 Valleywood Drive, Markham, Ontario, L3R 4T5.

Admin. Contact: Russell C. Stevenson, Manager, Business and Finance, Tel: (416) 475-7733.

Scientific Contact: Jim Aazam, Manager, Advanced Development & Engineering, Tel: (416) 475-7733.

Personnel: Total is 169 of which 50 are scientists and engineers.

Activities: Design of computer hardware architecture; design of computer operating software systems and application languages.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: english.

### **GEM SYSTEMS INC**

105 Scarsdale Road, Don Mills, Ontario, M3B 2R5.

#### **Research Unit**

Contact: Dr. Ivan Hrvoic, President, Tel: (416) 441-3210.

Personnel: Total is 4 of which 2 are scientists and engineers.

Activities: Instruments for geophysical exploration, mainly magnet meters for mineral and ore exploration; instruments for measurement of corrosion.

Facilities: Degassing equipment; environmental chamber; Helmholtz coils; microprocessor development systems.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D.

Language(s) in Which Services are Provided: english.

### **GEN-TEC INC**

2625 Dalton, Ste-Foy, Québec, G1P 3S9.

#### **Gen-Tec Inc.**

Admin. Contact: Jean-Luc Giroux, Président, Tel: (418) 651-8000.

Scientific Contact: Raymond Roberge, Vice-président, R-D, Tel: (418) 651-8000.

Personnel: Total is 15 of which 7 are scientists and engineers.

Activities: Electro-optics and microprocessor.

Facilities: Computers (5); Lasers (4).

Current or Potential Work Performed for: self or parent company, government.

Nature of Work Performed for Others: contract R&D, consultation.

Language(s) in Which Services are Provided: both english and french.

Note: Descriptive text has been translated from French.

### **GENAMATION INC**

351 Steelcase Road West, Markham, Ontario, L3R 3W1.

#### **Research Unit**

Admin. Contact: Mrs. J. Bolin, Director of Sales Administration, Tel: (416) 475-9434.

Scientific Contact: M. Stephenson, Senior Analyst, Tel: (416) 475-9434.

Personnel: Total is 4 of which 4 are scientists and engineers.

Activities: Real-time data acquisition and analysis hardware and software for computer based systems. Graphics output systems and software drivers. Digital and analog input and output devices with software drivers. Operating system modifications and extensions for special customer requirements.

Facilities: Various computer systems; analog/digital input/output equipment; test equipment; signal/input generation equipment.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation.

Language(s) in Which Services are Provided: both english and french.

### **GENERAL COMMUNION INC**

P.O. Box 70, Station P, Toronto, Ontario, M5S 2S6.

#### **GCI Laboratory**

Admin. Contact: Dr. Ramesh KoKa, Director, Research and Development, Tel: (416) 978-4348.

Scientific Contact: Dr. George Papachristodoulou, Director, Research and Development, Tel: (416) 978-4348.

Personnel: Total is 7 of which 4 are scientists and engineers.

Activities: Development of grinding equipment; development of processes yielding powders of desirable properties; powder technology in general.

Facilities: Grinding equipment; classification equipment; particle sizing equipment.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.

Language(s) in Which Services are Provided: english.

### **GENERAL CYBERNETICS CORPORATION**

10851 Shellbridge Way, Richmond, British Columbia, V6X 2W8.

#### **General Cybernetics Research & Development Laboratory Ltd.**

Admin. Contact: John Hawkins, President, Tel: (604) 273-2243.

Scientific Contact: Joe Millan, Vice President Research & Development, Tel: (604) 273-2243.

Personnel: Total is 37 of which 21 are scientists and engineers. (Note: including doctors or instructional designers)

Activities: Weapon simulation systems; military training systems; computer based training and education; health promotion; ultra sonics technology; infra-red technology; micro computer hardware and software graphics.

Facilities: Course authoring toolbox; ultrasonic measurement instruments.

Current or Potential Work Performed for: self or parent company, government.

Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.  
Language(s) in Which Services are Provided: both english and french.

#### **GENERAL FOODS INC.**

P.O. Box 1200, Don Mills, Ontario, M3C 3J5.  
**Cobourg**

520 William Street, Cobourg, Ontario, K9A 4L4.  
Admin. Contact: Glen Nelson, Director, Technical Research, Tel: (416) 372-2171.

Personnel: Total is 53 of which 25 are scientists and engineers.

Activities: Emulsion - interaction and stabilizing factors; kinetics of carbohydrate food systems; dry grocery foods development; ready-to-eat grocery foods development.

Facilities: Electron spin resonance; differential scanning calorimeter; haake viscometer.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: english.

#### **Montréal**

P.O. Box 100, LaSalle, Québec, H8R 3T7.  
Contact: J. Meinhold, Research Laboratory Manager, Tel: (514) 366-3600.

Personnel: Total is 26 of which 13 are scientists and engineers.

Activities: Roast and ground coffee development; instant coffee development.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: both english and french.

#### **GENERAL MOTORS OF CANADA LTD**

215 William Street East, Oshawa, Ontario, L1G 1K7.

##### **Research Unit**

Admin. Contact: Mr. J.E. Robertson, Director, Canadian Engineering, Tel: (416) 644-6264.

Scientific Contact: I.H. Holland, Director, Manufacturing Planning & Engineering, Tel: (416) 644-7290.

Personnel: 770 scientists and engineers. (Note: Total personnel in R&D unit not available.)

Activities: Diesel Division in London have the largest R&D expenditure because they design and develop new products and are continuously improving existing technology. Also the nature of their products is such that each new order usually requires some unique development. Diesel Division are involved in the design and development of locomotives, heavy earth moving equipment and light armoured military vehicles. Product Engineering in Oshawa have an active alternative fuels program and operate a cold weather Development Center at Kapuskasing which services all Divisions in the Corporation. Manufacturing Engineering have a variety of projects ongoing which are usually of a problem solving nature or implementing new technology in our manufacturing processes. Our in-house R&D activity in GM Canada is a function of our Engineering Staff and projects of this nature are in addition to normal job responsibilities and not the primary function of any personnel with the exception of the Manufacturing R&D coordinator.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: both english and french.

#### **GENERAL REFRACTORIES COMPANY OF CANADA LTD.**

Industrial Park Road, Smithville, Ontario, L0R 2A0.

#### **Research Unit**

Contact: Marty Wagenaar, Production Superintendent, Tel: (416) 957-3311.

Personnel: Total is 8 of which 3 are scientists and engineers.

Activities: Develop new products relating to refractories.

Facilities: X-Ray defraction; rotary slag furnace; heating furnace.

Current or Potential Work Performed for: self or parent company.

Nature of Work Performed for Others: testing and analysis.

Language(s) in Which Services are Provided: english.

#### **GEONICS LIMITED**

8-1744 Meyerside Drive, Mississauga, Ontario, L5T 1C5.

##### **Research Unit**

Contact: Mr. M. Bosnar, Vice President, Tel: (416) 676-9580.

Personnel: Total is 10 of which 6 are scientists and engineers.

Activities: Design and development of geophysical instrumentation employing electromagnetic techniques.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: english.

#### **GEORGE & NICK'S MACHINE WORKS LTD**

64312 Ogden Road S.E., Calgary, Alberta, T2G 4V3.

##### **Research Unit**

Admin. Contact: Robert J. Launder, V-P Finance, Tel: (403) 290-1720.

Scientific Contact: Ambrose Chun, Engineer, Tel: (403) 290-1720.

Personnel: Total is 2 of which 2 are scientists and engineers.

Activities: Disc flow pumping system; Well stimulation ball injector electronics; Machined goods products.

Facilities: Remote pressure recording; Fluid holding tank; Oscilloscopes.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: english.

#### **GEORGE KELK LIMITED**

48 Lesmill Road, Don Mills, Ontario, M3B 2T5.

##### **Research Unit**

Admin. Contact: Peter G. Kelk, General Manager, Tel: (416) 445-5850.

Scientific Contact: Sydney T. Wiles, Chief Engineer, Tel: (416) 445-5850.

Personnel: Total is 18 of which 7 are scientists and engineers.

Activities: Strain gage type force sensors; non-contacting dimension gages; high-resolution motion transducers; design for operation in severe environments.

Facilities: Advanced digital equipment; high-accuracy force calibrating equipment to 5000 tons capacity.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: english.

#### **GIGATEK LTD**

21 Progress Court, Unit 23, Scarborough, Ontario, M1G 3V4.

##### **Research Unit**

Unit 23, 21 Progress Court, Scarborough, Ontario, M1G 3V4.

Contact: Greg Trice, Director of Engineering, Tel: (416) 439-4104.

Personnel: Total is 2 of which 2 are scientists and engineers.

Activities: Design and development of high resolution, variable scan rate colour computer data/graphics displays. These are designed with high video bandwidth amplifier, stable high voltage supplied (25-30KV) and unique scanning (raster) technologies.

Facilities: Wide range sync generator; EHT testers.

Current or Potential Work Performed for: self or parent company, other clients.

Nature of Work Performed for Others: contract R&D.

Language(s) in Which Services are Provided: english.

#### **GIVAUDAN LIMITEE**

4131 Sherbrooke Street West, Montréal, Québec, H3Z 1B7.

##### **Research Unit**

3470 St. Antoine, Montreal, Quebec, H4C 1B1.

Contact: Robert Gordon, Technical Director,  
Tel: (514) 933-3656.

Personnel: Total is 10 of which 2 are scientists and engineers.

Activities: Researching the development of new flavours.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: english.

#### **GLANMAR MILLS LIMITED**

521 Lebeau Boulevard, St. Laurent, Quebec, H4N 1S2.

##### **Research Unit**

Admin. Contact: Harry Glanz, Vice-President,  
Tel: (514) 334-7002.

Scientific Contact: Sam Maron, President,  
Tel: (514) 334-7002.

Personnel: Total is 6 of which 3 are scientists and engineers.

Activities: Methods of producing Rachel Knitted fabrics for industrial applications; testing of various blends of fibres to establish viabilities in knitting applications.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: english.

#### **GLENAYRE ELECTRONICS LTD.**

1570 Kootenay Street, Vancouver, British Columbia, V5K 5B8.

##### **GLENAYRE ELECTRONICS - R&D**

Contact: M.P. Hodson, V.P. Engineering,  
Tel: (604) 293-1611.

Personnel: Total is 65 of which 33 are scientists and engineers.

Activities: Development of products associated with mobile telephone systems, paging systems, telephone answering systems and integrated voice and data services over HF, VHF and UHF radio telecommunications systems. Products are microprocessor based and the radio transmitter, receiver technologies and products have recently been incorporated through the acquisition of the Western Radio Ltd R&D team. Software development for these systems and their associated switching terminals is provided entirely by Glenayre. Manufacture of common equipment, trunk and line cards is an in-house capability.

Facilities: DEC/VAX 11/750 s/w Development tools; VLSI/GATEARRAY test & design capability; mobile telephone protocol specialists & facilities; voice mail systems (digital facility); HF data communications facility; Mentor graphics 'CAD' system with 4 nodes & 3 work stations.

Current or Potential Work Performed for: self or parent company, other clients.

Nature of Work Performed for Others: contract R&D, consultation.

Language(s) in Which Services are Provided: english.

#### **GLOBAL THERMOELECTRIC POWER SYSTEMS LTD**

902 5th Avenue, Bassano, Alberta, T0J 0B0.

##### **Commercial Thermoelectrics/Military Thermoelectrics**

Admin. Contact: Mr. Brian Taylor, Head of R&D,  
Tel: (403) 641-3512.

Scientific Contact: Al Harris, General Manager, New Ventures, Tel: (403) 641-3512.

Personnel: Total is 34 of which 34 are scientists and engineers.

Activities: Thermoelectric power systems R&D; thermoelectric materials R&D; microprocessor control system R&D; combustion (gaseous and liquid) R&D; electronic power conversion R&D; microprocessor controlled consumer products.

Facilities: Two large environmental chambers (-50 to 75 degrees C); combustion room; simultaneous property measurement of semiconductor properties.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D.

Language(s) in Which Services are Provided: english.

#### **GRAPHIC CONTROLS CANADA LTD**

215 Herbert Street, Ganoque, Ontario, K7G 2Y7.

##### **Research Unit**

Contact: Dr. Wm. G. Meathrel, Research & Chemical Director, Tel: (613) 382-4733.

Personnel: Total is 3 of which 3 are scientists and engineers.

Activities: Development of gas sensing device to indicate safe levels of ethylene oxide. Development of a personal dosimeter to indicate exposure to ethylene oxide. Development of medical gels and creams. Development of ECG monitoring electrodes. Development of conductive adhesives and conductive polymers.

Facilities: Infrared spectrophotometer; gas chromatograph; gas sterilizer/aerator.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: english.

#### **GREENING DONALD CO. LTD**

55 Queen Street North, Hamilton, Ontario, L8N 3J3.

##### **Research Unit**

Contact: R.J. Wilcox, Director, Corporate Development,  
Tel: (416) 528-5971.

Personnel: Total is 2 of which 2 are scientists and engineers.

Activities: Applied research to create a line of, aramid fibre ropes capable of operating in the same context as wire ropes. Other high strength fibres are also considered. Applied research in the general area of marrying plastics and extrusion technology with known wire rope technology to enhance the wire rope product line.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: english.

#### **GREGORY GEOSCIENCE LIMITED**

1794 Courtwood Crescent, Ottawa, Ontario, K2C 2B5.

##### **Gregory Geoscience Limited, Services Division**

Contact: Dr. A.F. Gregory, President, Tel: (613) 224-9565.

Personnel: Total is 4 of which 4 are scientists and engineers.

Activities: Cerebral processing for image analysis - satellite and airborne data. Design and development of

image analyzers. Integration of multiple sets of data for mapping. Development of techniques for thematic mapping. Field testing of mapping techniques.

Facilities: PROCOM-2 image analyzer; PROCOM-3 & 4 image analyzers in prototype.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.

Language(s) in Which Services are Provided: both english and french.

#### **GRIFFITH LABORATORIES, LIMITED (THE)**

757 Pharmacy Avenue, Scarborough, Ontario, M1L 3J8.

##### **R&D Department**

Contact: John Holme, Ph.D., Vice-President, Technical,  
Tel: (416) 288-3330.

Personnel: Total is 36 of which 20 are scientists and engineers.

Activities: Cereal Science - Baked products, processed cereal products; Food Science - Formulation and processing conditions for food products; Chemical Engineering - Unit operations, pilot plant design, plant design, extrusion; Chemistry - Analytical, physical, organic; Microbiology - fermentation; Biochemistry - Enzymes, physical biopolymers; Flavour - Composition and identification.

Facilities: GLC and HPLC equipment; spectrophotometers; texture measurement devices; extrusion pilot plant; bakery pilot plant; meat processing equipment.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: english.

#### **GROUPE CHRISTIE LTEE (LE)**

516 rue du Parc, St-Eustache, Québec, J7R 5B2.

##### **Centre de recherche**

Contact: Khosro Abouzia, Vice-président, R-D,  
Tel: (514) 472-9120.

Personnel: Total is 12 of which 6 are scientists and engineers.

Activities: Basic research in the field of photography; chemical products for the processing of silver halide-based photosensitive materials. Research and development: lithographic products, chemical products for the sensitization and processing of offset plates and related products.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: both english and french.

Note: Descriptive text has been translated from French.

##### **Polylab**

512 rue du Parc, St-Eustache, Québec, J7R 5B2.

Admin. Contact: M. Jacques Limoges, Vice-président  
Groupe, Tel: (514) 472-3500.

Scientific Contact: M. Bernard Martineau, Directeur  
Recherche et développement, Tel: (514) 472-3500.

Personnel: Total is 8 of which 6 are scientists and engineers.

Activities: Research and development in supplies for hospital radiology departments; Research and development in the field of products associated with disinfection.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: french.

Note: Descriptive text has been translated from French.

#### **GUERTIN BROS. COATINGS AND SEALANTS LTD**

50 Panet Road, Winnipeg, Manitoba, R2J 0R9.

##### **Research Unit**

Admin. Contact: Tony Guertin, Jr., President,  
Tel: (204) 237-0241.

Scientific Contact: Tony Guertin Jr., President,  
Tel: (204) 237-0241.

Personnel: Total is 20 of which 14 are scientists and engineers.

Activities: R&D in free radical polymerization of acrylic polymers, effect of monomer composition on durability, reactivity with cross linking moieties and effect on coatings performance; R&D in condensation polymers including epoxy, polyester, alkyd and urethanes for effect of composition on performance of coatings; R&D in reactive polyesters, alkyds and epoxy resins for cross linking with reactive diluents; research in high solids, water borne and ultra violet radiation curable coatings; development in vapor phase curing. R&D in caulking compounds. R&D in urethane based sealants and encapsulants; R&D in film laminating.

Facilities: Infra-red and gas chromatography.

Current or Potential Work Performed for: self or parent company.

Nature of Work Performed for Others: testing and analysis.

Language(s) in Which Services are Provided: english.

#### **GUILDLINE INSTRUMENTS LTD.**

P.O. Box 99, 21 Gilroy Street, Smiths Falls, Ontario, K7A 4S9.

##### **Research Unit**

Admin. Contact: Anthony Anderson, Vice-President,  
Planning and Technology, Tel: (613) 283-3000.

Scientific Contact: Lewis Brewer, Engineering Supervisor,  
Tel: (613) 283-3000.

Personnel: Total is 11 of which 6 are scientists and engineers.

Activities: Specific projects for new metrology instrumentation in the DC and LF fields of electrical measurement. Continuing product improvement for a measuring instrument product line of over 40 models. New product development for a line of oceanographic instrumentation and product support including site engineering and installation of ocean systems.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: english.

#### **GULF CANADA LTD**

130 Adelaide Street West, Toronto, Ontario, M5H 3R6.

##### **Gulf Canada Ltd Research and Development Department**

2489 North Sheridan Way, Mississauga, Ontario, L5K 1A8.

Admin. Contact: Dr. R.K. Ritchie, Manager - Technical & Administrative Services, Tel: (416) 822-6770.

Scientific Contact: R.E. Leveque, Manager Prod. Company Project, Tel: (416) 822-6770.

Personnel: Total is 143 of which 79 are scientists and engineers.

Activities: The Research Centre carries out programs directed towards meeting the current and future technology needs of Gulf Canada's two operating companies, GCPC (Products) and GCRI (Resources). Programs fall within four major areas of activity. These are concerned with: Production - The production (or recovery) of the primary fossil energy sources of natural gas, conventional light oil, heavy oil and oil sands. Processing - The evaluation, development, optimization and/or control of processes for gas plants, refineries (fuels, lubricants, and chemicals), heavy oil and resid upgrading, and coal beneficiation. Products- The development of petroleum products - lubricants, fuels

(gasoline, diesel, aviation, etc.) and asphalt - and technical support to their use in the marketplace. General Purpose - General support activities to the above-analytical, computers, eng. & mtce., & info.

Facilities: Engine Test Laboratory; Pilot Plant for fuels lubricant & upgrading processes; Coal Beneficiation; High-pressure phase behaviour; Fuels, lubricant & asphalt evaluation; Analytical-MS, GC, LC, SEM, IR, UV, ICP, AA, X-ray, Thermal.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.

Language(s) in Which Services are Provided: english.

#### **H.G. KALISH INC**

165 Oneida Drive, Pointe Claire, Québec, H9R 1A9.

##### **H.G. Kalish Inc (within company)**

Contact: Peter Nichols, R&D Manager,

Tel: (514) 694-2390.

Personnel: Total is 6 of which 1 is a scientist or engineer.

Activities: Packaging Machinery Development.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: both english and french.

#### **H.G.E. INC**

260 Lesmill Road, Don Mills, Ontario, M3B 2T5.

##### **Advanced Analysis Group**

Admin. Contact: P.H. Griggs, President,

Tel: (416) 447-5535.

Scientific Contact: A. (Tony) Firmin, Vice-President,

Tel: (416) 447-5535.

Personnel: Total is 9 of which 7 are scientists and engineers.

Activities: Finite element analysis for stress analysis, dynamic vibration and seismic analysis, thermal analysis, non-linear analysis. Software development; computer graphics; analysis of composite materials; product development; failure analysis.

Facilities: Seven computers (HP 9845, HP 9836, IBM PC AT).

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.

Language(s) in Which Services are Provided: english.

#### **H.L. BLACHFORD LTD.**

2323 Royal Windsor Drive, Mississauga, Ontario, L5J 1K5.

##### **Mississauga Laboratory**

Contact: W.R. Summers, Lab Manager,

Tel: (416) 823-3200.

Personnel: Total is 3 of which 2 are scientists and engineers.

Activities: Metal working compounds.

Facilities: Amsler lubrication tester.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: english.

##### **Montréal Laboratory**

977 Lucien L'Allier, Montréal, Québec, H3G 2C3.

Contact: M. Cole, Lab Manager, Tel: (514) 866-9775.

Personnel: Total is 6 of which 2 are scientists and engineers.

Activities: Heat stabilizers for PVC; lubricants for PVC; lubricants for rubber; lubricants for powdered metals; acoustical materials; construction materials.

Facilities: Brabender lab extruder.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: both english and french.

#### **HANSON (1984) INC**

45 Vansco Road, Toronto, Ontario, M8Z 5J7.

##### **Product Development Laboratory**

Admin. Contact: John P. Temple, Technical & Research Manager, Tel: (416) 255-1371.

Scientific Contact: Werner Valentin, Product Development Supervisor, Tel: (416) 255-1371.

Personnel: Total is 4 of which 3 are scientists and engineers.

Activities: Hanson (1984) Inc. manufacture and supply a wide range of products used in metal and plastic finishing. Some of these are made under license. Many are Hanson's own inventions. Industries supplied are Automotive, Appliances, Hardware, Furniture, Printed Circuits, Phono Records, Rotogravure, etc. Buffing compounds: liquid and solid mixtures of abrasives with lubricants for buffing metals and plastics; object is quality control and product improvement. Metal cleaners: alkaline, acid and solvent mixes used to clean and prepare all metals for further finishing; object is quality control and continuing research for new improved products. Electroplating additives: proprietary mixtures of chemicals used to enhance the properties of electroplated deposits; object is quality control and ongoing development of products to improve properties of electroplate such as appearance, corrosion protection, hardness, speed of application, etc. Chemical specialties: constant innovation of new chemical products to facilitate any phase of metal finishing. Pollution control: accelerated involvement in industry-wide problem of control of toxic waste.

Facilities: Gas chromatograph; infra-red spectrophotometer; atomic absorption unit; electroplating pilot plant, complete for most metals; metallographic section polishing and microscopic equipment.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: both english and french.

#### **HARRICANA METAL INC.**

1675, route de l'Aéroport, Amos, Québec, J9T 3A8.

##### **Ingénierie**

Admin. Contact: Claude Arcand, Directeur Recherche & Développement, Tel: (819) 732-8381.

Scientific Contact: Jacques Marchildon, Directeur Recherche & Développement, Tel: (819) 732-8381.

Personnel: Total is 3 of which 2 are scientists and engineers.

Activities: Research and development with a view to producing new forestry equipment and improving existing equipment. This department also conducts the basic tests: fatigue, wear, hydraulic pressure, structural tests.

Facilities: Construction test bench; JD693-B-excavator; 40' x 60' building.

Current or Potential Work Performed for: self or parent company, other clients.

Nature of Work Performed for Others: consultation.

Language(s) in Which Services are Provided: both english and french.

Note: Descriptive text has been translated from French.

**HARRIS FARINON CANADA INC**

657 Orly Avenue, Dorval, Québec, H9P 1G1.

**Research Unit**

Contact: Ian Grier, R&D Manager, Tel: (514) 636-0974.

Personnel: Total is 26 of which 13 are scientists and engineers.

Activities: Microwave communication; digital multiplexing; fiber optic communications.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: english.

**HATFIELD CONSULTANTS LTD**

201-1571 Bellevue Avenue, West Vancouver, British Columbia, V7V 3R6.

**Hatfield Biotechnology Ltd**

Contact: C.T. Hatfield, President, Tel: (604) 926-3261.

Personnel: Total is 20 of which 8 are scientists and engineers.

Activities: Salmon culturing techniques, shellfish culturing techniques, mariculture equipment development, mariculture genetic selection, salmon culture disease control, mariculture personnel training, agriculture/wildlife conflict resolution, aquaculture/wildlife conflict resolution, agriculture/forestry joint management, waterfowl habitat enhancement, terrestrial bird and wildlife enhancement.

Facilities: Salmon and shellfish culturing facility on Saltspring Island with associated equipment; Farm and woodlots on Saltspring Island with associated equipment.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.

Language(s) in Which Services are Provided: english.

**HAWKER SIDDELY CANADA INC**

7 King Street East, Toronto, Ontario, M5C 1A3.

**Kockums CanCar Inc.**

P.O. Box 4200, Main Post Office, Vancouver, British Columbia, V6B 4K6.

Contact: T.L. Roche, Director of Engineering,

Tel: (604) 888-1515.

Personnel: Total is 20 of which 18 are scientists and engineers.

Activities: R&D for sawmill and lumber processing machinery and electronic control and guidance systems for this equipment. Continuing R&D to improve yield and surface finish of lumber processed from logs.

Facilities: Laboratory scale presses and associated equipment to fabricate various types of building panel boards.

Current or Potential Work Performed for: self or parent company, government.

Nature of Work Performed for Others: contract R&D, consultation.

Language(s) in Which Services are Provided: english.

**Orenda Division**

P.O. Box 6001, Toronto AMF, Ontario, L5P 1B3.

Admin. Contact: C.M. Hinds, Director, Marketing,

Tel: (416) 677-3250.

Scientific Contact: J.A. Barber, Acting Chief, Engineering,

Tel: (416) 677-3250.

Personnel: Total is 32 of which 8 are scientists and engineers.

Activities: Metallurgical failure analysis of gas turbine components (pipelines/bridges/wind turbine). Research and development on high speed bearing and shaft seals, shaft dynamics investigations. Strain gauge investigations on rotating and static assemblies. Fatigue testing of full scale railcar axles. Environmental testing (altitude, high

and low temperature, dust, salt spray, vibration and shock).

Facilities: Strain gauge applications technology; calibration services to national standards (NRC/NBS/NTL); high temperature stress rupture tensile testing equipment; AAR axle fatigue testing machine; environmental chambers.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.

Language(s) in Which Services are Provided: english.

**Corporate R&D Dept.**

P.O. Box 6001, Toronto AMF, Ontario, L5P 1B3.

Contact: D. Quan, Director, Corporate R&D,

Tel: (416) 677-3250.

Personnel: Total is 6 of which 5 are scientists and engineers.

Activities: R&D engineering for all divisions and subsidiaries of Hawker Siddeley Canada Inc.

Current or Potential Work Performed for: self or parent company, government.

Nature of Work Performed for Others: contract R&D, consultation.

Language(s) in Which Services are Provided: english.

**HELIX BIOTECH LTD.**

217-7080 River Road, Richmond, British Columbia, V6X 1X5.

**Research Unit**

Contact: Dr. T.G. Owen, President, Tel: (604) 270-7468.

Personnel: Total is 9 of which 5 are scientists and engineers.

Activities: Protein purification; Protein conjugates (Antibody-enzyme conjugates); Antibody production and purification; Immunochemistry; Hapten conjugations and derivatives; Enzyme immunoassay development; Development of medical tests; Development of veterinary tests; Biochemical analyses.

Facilities: Fast Protein Liquid Chromatograph (FPLC); Centrifuge (high speed, refrigerated); Column chromatography equipment; Spectrophotometers; Electrophoresis equipment; Freeze dryer.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.

Language(s) in Which Services are Provided: english.

**HELMITIN CANADA INC**

99 Shorncliffe Road, Toronto, Ontario, M8Z 5K7.

**Development Laboratory**

Contact: Ernie A. Leiner, President, Tel: (416) 239-3105.

Personnel: Total is 5 of which 2 are scientists and engineers.

Activities: Development of adhesives and coatings.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: english.

**HERMES ELECTRONICS LTD.**

40 Atlantic Street, Dartmouth, Nova Scotia, B2Y 4A1.

**Research Unit**

Admin. Contact: Kent Farrell, Chief Engineer,

Tel: (902) 466-7491.

Scientific Contact: Andrew Keast, Manager, Advanced Development, Tel: (902) 466-7491.

Personnel: Total is 46 of which 25 are scientists and engineers.

Activities: R&D is performed in the general area of underwater acoustic detection and processing. The work

is primarily of a development nature in areas which have potential for use in the company's manufactured products (sonobuoys). Specialization is concentrated in the field of hydro phones and low cost miniaturized electronic acoustic processing circuits.

Facilities: Computer controlled hydro acoustic tank; complete range of environmental test chambers including humidity, temperature, altitude, pressure and vibration; quiet deep ocean test site; software development system.

Current or Potential Work Performed for: self or parent company, government.

Nature of Work Performed for Others: contract R&D.

Language(s) in Which Services are Provided: english.

#### **HEVAC FIREPLACE FURNACE MFG LTD.**

4390 PALETTA COURT, BURLINGTON, ONTARIO, L7L 5R2.

##### **HEVAC**

Admin. Contact: R.C. Reiger, Chief Engineer,

Tel: (416) 632-4710.

Scientific Contact: Heinz Rieger, Research-Development,

Tel: (416) 632-4710.

Personnel: Total is 3 of which 2 are scientists and engineers.

Activities: Alternative energy equipment; Prefab fireplaces; Fireplace inserts; Wood heaters, etc.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: english.

#### **HOFFMANN-LA ROCHE LIMITED**

Suite 700, 401 The West Mall, Etobicoke, Ontario, M9C 5J4.

##### **Medical Department**

Admin. Contact: D.P. Zarowny, Vice-President and Medical Director, Tel: (416) 620-2841.

Scientific Contact: Michel Caron, Director of Clinical Research Pharmaceuticals, Tel: (416) 620-2842.

Personnel: Total is 14 of which 6 are scientists and engineers.

Activities: Clinical research involving the development of new pharmaceutical products.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: both english and french.

#### **HONEYWELL AMPLITROL INC.**

100 Montcalm Blvd, Candiac, Quebec, J5R 1B7.

##### **Engineering Department**

Contact: Bernard Fournier, Engineering Manager, Tel: (514) 659-9111.

Personnel: Total is 21 of which 19 are scientists and engineers.

Activities: H.A.I. Engineering Department is involved in research and development of equipment used in detecting, transmitting and receiving alarm signals. This includes the design of sensors, customer premises signal processing equipments, central station receiving equipment and central station computer automation. The specialization fields of the department are electronics design, software programming of microprocessor and signal processing analysis and simulation.

Facilities: Emulogic system; IBM PC AT; DPS6-75; logic analysers; scopes, charge amplifier; digital tester

Current or Potential Work Performed for: self or parent company, other clients.

Language(s) in Which Services are Provided: both english and french.

#### **HONEYWELL LIMITED**

155 Gordon Baker Road, North York, Ontario, M2H 3N7.

##### **Toronto Software Development Centre**

515 Consumers Road, North York, Ontario, M2J 4Z2.

Admin. Contact: Nels Patterson, Director,

Tel: (416) 492-0770.

Scientific Contact: Blake Reid, Manager,

Tel: (416) 499-6111.

Personnel: Total is 80 (Note: Total number of scientists & engineers not available.)

Activities: Software; computer - assisted learning; heating, ventilating, air-conditioning controls; hydronic valves.

Current or Potential Work Performed for: self or parent company.

Nature of Work Performed for Others: contract R&D.

Language(s) in Which Services are Provided: both english and french.

##### **Advanced Technology Centre**

Contact: Dr. D.B. Reid, Manager, ATC,

Tel: (416) 499-6111.

Personnel: Total is 20 of which 18 are scientists and engineers.

Activities: Guidance, Control, Remote Sensing and Navigation Systems and Systems Integration for Aerospace, Military and Industrial Applications. Technologies include Signal Processing, Communications, Displays, VLSI Sonar, Artificial Intelligence/Expert Systems and Human Factors.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation.

Language(s) in Which Services are Provided: english.

#### **HOPE LABORATORIES LTD**

P.O. Box 209, Shakespeare, Ontario, N0B 2P0.

##### **Research Unit**

Admin. Contact: Jan Skowby, Office Manager,

Tel: (519) 625-8891.

Scientific Contact: Conrad Van Dijk, President,

Tel: (519) 625-8891.

Personnel: Total is 8 of which 4 are scientists and engineers.

Activities: R&D is carried out on animals i.e. poultry, chickens and turkeys and pigs. The R&D is carried out in our laboratory facilities, in special research barns or on commercial farms using their barns and facilities. The most prominent form of R&D was testing of growth promotants, coccidiostats and antibiotics with or without challenge tests. Vaccines and diseases were also studied in these animals.

Facilities: Microbiology and serology lab; research barn for poultry and swine; availability of commercial barns.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.

Language(s) in Which Services are Provided: english.

#### **HUMAN COMPUTING RESOURCES**

10 St.Mary St.; Suite 401, Toronto, Ontario, M4Y 1P9.

##### **Technical Services**

Admin. Contact: Birgit Vogelzang, Unit Marketing

Specialist, Tel: (416) 922-1937.

Scientific Contact: Mike Tilson, Vice-President, Technical Services, Tel: (416) 922-1937.

Personnel: Total is 40 of which 35 are scientists and engineers.

Activities: UNIX operating systems; computer graphics; system tools, computer languages, text editors and applications running under UNIX; porting UNIX operating systems to various microprocessors.

Facilities: PDP, VAX processors; various target procesors; National Semiconductor 32000, Motorola 68000, Intel 286, etc.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation.

Language(s) in Which Services are Provided: english.

#### **HUNTEC (70) LIMITED**

1750 Brimley Road, Scarborough, Ontario, M1P 4X7.

##### **Engineering Department**

Admin. Contact: Doug Drysdale, Engineering Manager, Tel: (416) 299-4100.

Scientific Contact: R.W. Hutchins, Technical Director, Tel: (416) 299-4100.

Personnel: Total is 9 of which 4 are scientists and engineers.

Activities: Theoretical and applied research and systems engineering in inertial navigation systems, underwater acoustics and multisensor integration technology, recent projects include: aircraft strapdown inertial system study; aerial hydrography sensor pilot project; towfish track recovery system configuration design; towed line array motion sensing study; synthetic aperture radar motion compensation project; underwater pipeline survey system; remote sensing of the geotechnical properties and geotechnical classification of marine sediments from a ship underway.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation.

Language(s) in Which Services are Provided: english.

#### **HURLEY FISHERIES CONSULTING LTD.**

P.O. Box 3049, 97 Deerbrooke Dr., Dartmouth, Nova Scotia, B2W 4Y2.

##### **Research Unit**

Contact: Mr. Geoffrey V. Hurley, President, Tel: (902) 435-6757.

Personnel: Total is 4 of which 3 are scientists and engineers.

Activities: Applied fisheries biology; Seafood quality evaluation.

Facilities: Zeiss Research Microscope; Wild Dissecting Microscope; Time Lapse Video Recorder; Apple II E Microscope.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.

Language(s) in Which Services are Provided: english.

#### **HURON CHEMICALS LTD.**

P.O. Box 1145, 25 Don Street, Kingston, Ontario, K7L 4Y5.

##### **Research Unit**

Contact: Dr. Dennis Dong, Location Manager and Research Director, Tel: (613) 546-2651.

Personnel: Total is 8 of which 4 are scientists and engineers.

Activities: Electrolytic production of chemicals; Treatment of chemicals to produce acceptable end-use product; Corrosion testing of materials of construction; Development of corrosion resistant liners; Inorganic electrochemistry; Catalytic electrodes design and formulation, plastic and elastomer for corrosion resistance; sodium chlorates production cells, hydrogen peroxide cells; Air cathodes.

Facilities: Potentiostats; Gas chromatograph.

Current or Potential Work Performed for: self or parent company, other clients.

Language(s) in Which Services are Provided: english.

#### **HUYCK CANADA LTD**

1 Kenwood Place, Amprior, Ontario, K7S 1K9.

##### **Product Development**

Contact: T.A. Wood, Technical Manager, Tel: (613) 623-3161.

Personnel: Total is 6 of which 2 are scientists and engineers.

Activities: Research involves textile fibres, chemical treatments and manufacturing processes to be used in the manufacturing process of press felts for the paper machine and the development of the end product to better serve the paper industry.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: both english and french.

#### **HYBRID TURKEYS INC**

9 Centennial Drive, Kitchener, Ontario, N2B 3E9.

##### **Research Unit**

Admin. Contact: Ross R. Shantz, President, Tel: (519) 578-2740.

Scientific Contact: Thomas P. Burnard, Research Coordinator, Tel: (519) 662-3130.

Personnel: Total is 50 of which 9 are scientists and engineers.

Activities: Testing pure line performance; reproductive and growth characteristics; evaluation of crossbred performance as commercial parent stock breeder flocks; evaluation of final product crosses for growth, livability, feed efficiency, carcass yield traits; health programs - mycoplasmas, salmonella eradication; research in semen evaluation and preservation techniques; research in breeder nutrition and management systems.

Facilities: Research hatchery; stud barn & lab for semen testing; computerized research records; trap nest test facilities.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: english.

#### **HYCAL ENERGY RESEARCH LABORATORIES LTD.**

1338-A 36th Avenue N.E., Calgary, Alberta, T2E 6T6.

##### **Research Unit**

Admin. Contact: John E. Blumell, Office Manager, Tel: (403) 250-5800.

Scientific Contact: Douglas W. Bennion, President, Tel: (403) 250-5800.

Personnel: Total is 15 of which 3 are scientists and engineers.

Activities: Hycal's objectives are to perform applied research and to provide consulting services to the petroleum industry in the areas of reservoir engineering and enhanced recovery. It offers the following services: 1. Reservoir engineering laboratory studies. 2. Special phase behaviour and core displacement studies. 3. Miscible flood studies. 4. Thermal recovery studies. 5. Numerical simulation of laboratory experiments. 6. Numerical simulation of pilot and field projects. 7. Reservoir engineering studies. 8. Development of enhanced oil recovery processes. 9. Design and fabrication of laboratory equipment and small pilot plants. 10. Research into prevention of well-bore damage.

Facilities: Large-scale combustion tube; large-scale core displacement equipment; numerical simulators; oil, gas and water analysis.

Current or Potential Work Performed for: government, other clients.  
Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.  
Language(s) in Which Services are Provided: english.

## **HYDRO-QUEBEC**

75 boulevard Dorchester ouest, Montréal, Québec, H2Z 1A4.  
**Institut de recherche d'Hydro-Québec**

1800, Montée Sainte-Julie, Varennes, Québec, J0L 2P0.

Admin. Contact: Jean Lacasse, Chef de service, Ressources et Information, Tel: (514) 652-8370.

Scientific Contact: Toby Gilsig, Vice-président, IREQ, Tel: (514) 652-8239.

Personnel: Total is 518 of which 190 are scientists and engineers.

Activities: The Institut de recherche d'Hydro-Québec (IREQ) is attempting to anticipate, study and fulfill Hydro-Québec's current and future technical needs by working to improve existing equipment, studying the optimal use of networks and equipment, and performing research on electrical phenomena. The IREQ also welcomes Canadian, American and other countries that produce and distribute electricity, and all manufacturers wishing to develop new equipment or improve their products. The R-D work performed at IREQ pertains mainly to high-voltage power transmission, transmission and distribution equipment, electrical phenomena, network simulation and controls, communications, materials, new energy sources and industrial uses of electricity.

Facilities: High-voltage laboratories and pollution chambers; mechanics laboratories; high-power laboratories; network simulators and electronic laboratories; hydrogen plant; Tokamak at Varennes; nuclear and applied chemistry laboratory; electrical insulating materials laboratories; metallurgy and hydraulic materials laboratories; experimental 56 kW vertical-axis windmill; heatpump testing benches; gasification and catalytic synthesis laboratory; and laboratory to study thermal applications of plasmas.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, testing and analysis.

Language(s) in Which Services are Provided: both english and french.

Note: Descriptive text has been translated from French.

## **IAN W FRENCH AND ASSOCIATES LIMITED**

30 Wellington Street East, Markham, Ontario, L3P 3A9.

### **Research Unit**

Contact: Ian W French, President, Tel: (416) 294-9301.

Personnel: Total is 6 of which 3 are scientists and engineers.

Activities: Pharmacokinetic/Clinical Studies on drug entities in normal volunteers and patients. Organizing/Supervising Clinical Trials for Pharmaceutical Formulations.

Facilities: Sleep-In Clinic Centre

Current or Potential Work Performed for: other clients.

Nature of Work Performed for Others: contract R&D, consultation.

Language(s) in Which Services are Provided: both english and french.

## **IBM CANADA LTD,**

3500 Steeles Ave E, Markham, Ontario, L3R 2Z1.

## **IBM Canada Ltd Laboratory**

1150 Eglinton Ave E, Don Mills, Ontario, M3C 1H7.

Contact: B. Andersen, Director, Tel: (416) 443-2230.

Personnel: Total is 970 of which 687 are scientists and engineers.

Activities: The laboratory does software development in the following areas: packet switching data networks (x.25); local area networks; national languages; computer languages; office systems; engineering and scientific applications and packaging; videotext.

Facilities: Large internal computer ctr.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: both english and french.

## **ICAM TECHNOLOGIES CORPORATION**

1900 Sources Blvd, Pointe Claire, Québec, H9R 4Z3.

### **R&D Department**

Admin. Contact: John Nassr Jr., Group Leader, Application Analysis, Tel: (514) 697-8033.

Scientific Contact: John J. Nassr, President, Tel: (514) 697-8033.

Personnel: Total is 30 of which 30 are scientists and engineers.

Activities: CAD/CAM software and systems; plant automation and scheduling; computer aided learning; advanced manufacturing software; advanced manufacturing training centers.

Facilities: Computer equipment; computer equipment-microprocessor thru mainframe; manufacturing software.

Current or Potential Work Performed for: self or parent company, government.

Nature of Work Performed for Others: contract R&D.

Language(s) in Which Services are Provided: both english and french.

## **ILCO UNICAN INC.**

5795 De Gaspé Avenue, Montréal, Québec, H2S 2X3.

### **Ilco Unican Inc. (Corporate Lab)**

Admin. Contact: M. Janis Terauds, Vice-président sen., Tel: (514) 273-0451.

Scientific Contact: Alex Branover, Directeur du laboratoire, Tel: (514) 273-0451.

Personnel: Total is 16 of which 9 are scientists and engineers.

Activities: Lock mechanisms; electronic components, circuits and units.

Facilities: Mechanical workshop; life-testing workshops; design computers.

Current or Potential Work Performed for: self or parent company.

Nature of Work Performed for Others: consultation, testing and analysis.

Language(s) in Which Services are Provided: both english and french.

Note: Descriptive text has been translated from French.

## **IMA AQUATIC FARMING LIMITED**

R.R. #1, Glenwood, Yarmouth County, Nova Scotia, B0W 1W0.

### **Research Unit**

Contact: Brian H. Ives, President, Tel: (902) 643-2799.

Personnel: Total is 4 of which 2 are scientists and engineers.

Activities: Aquaculture - cultivation of salmonids and shellfish. Appropriate intermediate technology - passive solar/heat pump application. Hydroponics - scrubbing systems for fish hatchery. Economic analysis of R&D and production programmes. August 1985 - Computer models for aquaculture; spread sheets; accounting.

Facilities: Fish hatchery; heat pumps; passive solar buildings.  
Current or Potential Work Performed for: self or parent company, government, other clients.  
Nature of Work Performed for Others: contract R&D, consultation.  
Language(s) in Which Services are Provided: english.

#### **IMPERIAL OIL LIMITED**

111 St. Clair Ave W., Toronto, Ontario, M5W 1K3.

##### **Research Division, Esso Petroleum Canada**

453 S. Christina St. (P.O. Box 3022), Sarnia, Ontario, N7T 7M1.

Admin. Contact: Clem W. Bowman, Vice-President,  
Tel: (519) 339-2469.

Scientific Contact: Jack Walker, Manager, Planning & Operations, Tel: (519) 339-2467.

Personnel: Total is 400 of which 98 are scientists and engineers.

Activities: Research and Development studies on Petroleum Processes and Products. Exploratory and applied research into processing of crude oils for fuels, lubricants and asphalts. Development and improvement of fuel products, automotive, industrial and process oils. Environmental Protection studies.

Facilities: Pilot plant; engine test laboratory; all weather chassis dynamometer; "State of the art" analytical laboratory.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D.

Language(s) in Which Services are Provided: english.

##### **Esso Chemical Canada; Chemical Technology Dept**

480 S. Christina St. (P.O. Box 69), Sarnia, Ontario, N7T 2P1.

Contact: Mr. Brian L. Lockhart, Manager,  
Tel: (519) 339-2716.

Personnel: Total is 70 of which 35 are scientists and engineers.

Activities: Research and Development and applied technical service to chemical product lines: Plastics (Poly vinyl chloride and polyethylene), Olefins, Olefinic solvents, Aromatic solvents, Chemical intermediates, Lube additives, Other petrochemicals.

Facilities: Plastics fabricating/testing; process pilot plants; various hydrocarbon analytical.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D.

Language(s) in Which Services are Provided: english.

##### **Esso Resources Canada Ltd, Research Department**

339-50th Ave S.E., Calgary, Alberta, T2G 2B3.

Contact: Mr. V.C. Larson, Manager, Tel: (403) 259-0201.

Personnel: Total is 150 of which 70 are scientists and engineers.

Activities: Research supports exploration for and production of oil, natural gas, coal and minerals. Short term special problem solving, and long term development of processes, techniques and apparatus. Main research areas include: - drilling and completions; - tertiary recovery processes for conventional and light oils; - recovery processes for heavy oil; - coal characterization and beneficiation processes for coal minerals; - offshore sea and ice conditions, design of offshore structures; - geological and geophysical studies to locate subsurface deposits; - corrosion reduction using coatings, non-metallic materials, inhibitors.

Facilities: 30 x 60 metre ice and wave test basin; core analysis facilities; adiabatic tube for porous media flow studies; 3-D axial loading rock mechanics tests; field test truck for in situ stress measurements.

Current or Potential Work Performed for: self or parent company, other clients.

Nature of Work Performed for Others: contract R&D.

Language(s) in Which Services are Provided: english.

##### **Technology Centre, Building Products of Canada Ltd**

0244 St. Patrick St., Lasalle, Québec, H8R 1R8.

Contact: Mr. S.A. McIntosh, Technology Manager,  
Tel: (514) 364-0161.

Personnel: Total is 36 of which 20 are scientists and engineers.

Activities: Building Material applications covering roofing, sheathing and wood fibre board products and the corresponding processes. Special emphasis on Insulation, Industrial Roofing, and Asphalt Products.

Facilities: Industrial Roofing Test Lab.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: both english and french.

#### **IMPERIAL TOBACCO LTD.**

3810 ST. Antoine Street West, Montréal, Québec, H4C 1B5.

##### **Research & Development**

734 Bourget, Montréal, Québec, H4C 2M7.

Admin. Contact: Dr. P.J. Dunn, Vice-President, R&D,  
Tel: (514) 932-6161.

Scientific Contact: Dr. S.R. Massey, Director, R&D,  
Tel: (514) 932-6161.

Personnel: Total is 51 of which 24 are scientists and engineers.

Activities: Activities of R&D related to tobacco and tobacco products which include development of new products and improvements of existing ones. Fields of specialization: biological, agricultural, analytical, physical chemistry, organic chemistry, process development.

Facilities: HPLC & Gas chromatographs; technicon autoanalyzer; UV, infra-red and atomic absorption spectrophotometers; CO meters; specialized smoking machines.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: both english and french.

#### **INCO LIMITED**

P.O. Box 44, 1 First Canadian Place, Toronto, Ontario, M5X 1C4.

##### **Inco Limited J. Roy Gordon Research Laboratory**

Sheridan Park, Mississauga, Ontario, L5K 1Z9.

Admin. Contact: Dr. John H. Blakeley, Manager, Research Services, Tel: (416) 822-3322.

Scientific Contact: Dr. James A.E. Bell, Director of Research, Tel: (416) 822-3322.

Personnel: Total is 83 of which 31 are scientists and engineers.

Activities: Research in the extractive metallurgy of nickel and copper-nickel ores. Disciplines include mineral processing, pyrometallurgy, hydrometallurgy and electrochemistry. Integrated pilot plants in Port Colborne are used for large scale testing of pyrometallurgical and hydrometallurgical processes.

Facilities: Integrated pilot plants.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.

Language(s) in Which Services are Provided: english.

#### **INDAL TECHNOLOGIES INC.**

3570 Hawkestone Road, Mississauga, Ontario, L5C 2V8.

#### Research Unit

Contact: R.E. Marcille, V.P. Business Development,  
Tel: (416) 275-5300.

Personnel: Total is 10 of which 8 are scientists and engineers.

Activities: Shipboard helicopter support systems; wind turbine power output and structural performance, measurement, analysis and interpretation; vertical axis wind turbine-aerodynamics and structural dynamics; microprocessor control systems development; wind turbine/diesel hybrid systems design, development, testing and monitoring.

Current or Potential Work Performed for: self or parent company, government.

Nature of Work Performed for Others: contract R&D.

Language(s) in Which Services are Provided: both english and french.

#### INDESCOR HYDRODYNAMICS INC.

210 Bradwick Drive, Concord, Ontario, L4K 1K8.

#### Research Unit

Contact: Richard Puchala, D.Sc., Director of Research,  
Tel: (416) 669-5150.

Personnel: Total is 2 of which 2 are scientists and engineers.

Activities: High pressure water jetting technology; ultra-high pressure water jetting technology; high pressure and ultra-high pressure water jetting cutting systems; high pressure water chipping for structural remedial works; automatic high pressure water cleaning systems - particularly for steelmaking and coke cutting of hard materials, concrete and metals by abrasive water jet systems; rock drilling and slotting by high pressure water.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.

Language(s) in Which Services are Provided: english.

#### INDUSTRIAL ADHESIVES DIVISION OF TIMMINCO LIMITED

90 Tycos Drive, Toronto, Ontario, M6B 1W2.

#### Research Unit

Contact: Dr. C.P.R. Jennison, Director, R&D,  
Tel: (416) 781-6113.

Personnel: Total is 3 of which 2 are scientists and engineers.

Activities: Development of passive and reactive, solvent, water and hot melt based adhesives and coatings for the packaging, automotive, converting, etc. markets.

Facilities: IR Spectrometer; GC (capillary and packed column); LC/GPC.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: english.

#### INDUSTRIAL APPLICATIONS OF MICROELECTRONICS CENTRE, INC

5th Floor, Engineering Building, University of Manitoba, Winnipeg, Manitoba, R3T 2N2.

#### Research Unit

Admin. Contact: Alan Shade, General Manager,  
Tel: (204) 261-9620.

Scientific Contact: Dr. W. Kinsner, Director of Research,  
Tel: (204) 261-9621.

Personnel: Total is 8 of which 5 are scientists and engineers.

Activities: Systolicon (R); process control; ocular pulse; data acquisition systems; local network architecture; industrial graphics processor.

Facilities: Intellec IV and III; VLSI Design Station; Modicon Touchscreen Station; Hewlett Packard 64000.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.

Language(s) in Which Services are Provided: english.

#### INDUSTRIES JOHN LEWIS LTEE (LES)

10300 boulevard Ray Lawson, Anjou, Québec, H1J 1M1.

#### Research Unit

Contact: Jean-Guy Valiquette, Directeur, Recherche et développement, Tel: (514) 352-2950.

Personnel: Total is 3 of which 2 are scientists and engineers.

Activities: Design and manufacture of specialized equipment for an ice-cream plant and for our own use.

Current or Potential Work Performed for: self or parent company.

Nature of Work Performed for Others: contract R&D, testing and analysis.

Language(s) in Which Services are Provided: both english and french.

Note: Descriptive text has been translated from French.

#### INDUSTRIES MACHINEX INC.

2121 Olivier, Parc Industriel, Plessisville, Québec, G6L 3G9.

#### Research Unit

Admin. Contact: Germain Massicotte, Président,  
Tel: (819) 362-3281.

Scientific Contact: Mario Massicotte, Vice-président,  
Tel: (819) 362-3281.

Personnel: Total is 1 of which 1 is a scientist or engineer.

Activities: Industries Machinex Inc specializes in the manufacture of handling, processing and storage equipment for grains, feed and chemical fertilizers. It also designs and manufactures jigs and industrial machines of all types.

Current or Potential Work Performed for: self or parent company, other clients.

Nature of Work Performed for Others: testing and analysis.

Language(s) in Which Services are Provided: both english and french.

Note: Descriptive text has been translated from French.

#### INFO CENTRE LIMITEE

Suite 390, 3100 côte Vertu, Ville St-Laurent, Québec, H4R 3J8.

#### Speedware

Suite 390, 3100 cote Vertu, Ville St-Laurent, Québec, H4R 2J8.

Admin. Contact: Jean-Pierre Théorêt, Président,  
Tel: (514) 337-5007.

Scientific Contact: Raymond Ouellette, Chef de projet,  
Tel: (514) 337-5007.

Personnel: Total is 15 of which 10 are scientists and engineers.

Activities: Development of fourth-generation computer language for the Hewlett-Packard 3000 and 150 series. Development of software which enables clients to implement computer systems by adopting a prototyping approach.

Facilities: HP 3000; HP 150; IBM-PC.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation.

Language(s) in Which Services are Provided: both english and french.

Note: Descriptive text has been translated from French.

**T.O.U.R.S.**

Suite 300, 6303 Airport Road, Mississauga, Ontario, L4V 1R8.

Admin. Contact: Ian Farquharson, Chairman,  
Tel: (416) 678-1841.

Scientific Contact: Philip Haines, General Manager (Travel Division), Tel: (416) 678-1841.

Personnel: Total is 15 of which 10 are scientists and engineers.

Activities: Development of software products covering all travel industry requirements for travel wholesalers.

Facilities: HP 3000.

Current or Potential Work Performed for: self or parent company, other clients.

Nature of Work Performed for Others: testing and analysis.

Language(s) in Which Services are Provided: both english and french.

Note: Descriptive text has been translated from French.

**INFOLYTICA CORPORATION**

1500 Stanley St. Suite 430, Montreal, Quebec, H3A 1R3.

**Research Unit**

Admin. Contact: Monika S. Renner, Business Manager,  
Tel: (514) 849-8752.

Scientific Contact: D.A. Lowther, Vice-President,  
Tel: (514) 849-8752.

Personnel: Total is 12 of which 9 are scientists and engineers.

Activities: Computer Graphics Software development. Mathematical Software development. Numerical Analysis. Electromagnetics Systems Analysis and Design. C.A.D. Systems.

Facilities: HP 9000 computer; Access to several other computers.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.

Language(s) in Which Services are Provided: english.

**INFRARED PHOTOGRAPHIC LTD.**

74 Burland Street, Ottawa, Ontario, K2B 6K1.

**Research Unit**

Contact: W.E. Pinson, Ph.D., Principal Investigator,  
Tel: (613) 828-0683.

Personnel: Total is 2 of which 2 are scientists and engineers.

Activities: Design, fabrication & testing of 2 and 3 terminal tandem solar photo-voltaic devices (CdSe/pn Si, nip amorphous Si/np Si) and application of same to electrolysis and the storage of solar energy as hydrogen fuel; in short, a man made leaf that makes hydrogen fuel; optical and electrical properties of semiconductors; thin films of semiconductors and metals and their electr. & opt. prop.; analysis and interpretation of ir data, plus ir instrumentation; photoelectrochemistry of semiconductor-electrolyte interface and interpretation of data.

Facilities: Hot wall evaporator with 4 semi-automatic temperature controls; solar simulator for testing pv cells.

Current or Potential Work Performed for: self or parent company, government.

Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.

Language(s) in Which Services are Provided: english.

**INGERSOLL RAND CANADA INC.**

630 Dorchester Boulevard West, Montreal, Quebec, H3B 1S6.

**Coal Slurry Pump Development**

560 Conestoga Boulevard, Cambridge, Ontario, N1R 5X3.

Admin. Contact: R.G. Warren, General Manager,  
Tel: (519) 621-4020.

Scientific Contact: Jan Duha, Development Engineer,  
Tel: (519) 621-4020.

Personnel: Total is 12 of which 4 are scientists and engineers.

Activities: Development of a full size coal slurry mainline pump and its components.

Facilities: Full size test loop (1); sub scale component test rig loops (2); Miller abrasivity test rig (1).

Current or Potential Work Performed for: self or parent company.

Nature of Work Performed for Others: consultation, testing and analysis.

Language(s) in Which Services are Provided: english.

**Pulp and Paper Development**

375 Courcellette Street, Sherbrooke, Québec, J1H 3X4.

Admin. Contact: J.M. Eloy, V.P. Operations,  
Tel: (819) 569-5121.

Personnel: Total is 12 of which 6 are scientists and engineers.

Activities: Development of new technology on high yield pumping systems including refiners and bleaching.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: english.

**INNOVATIVE TECHNOLOGY INC**

2710 Lancaster Road, Ottawa, Ontario, K1B 4H3.

**Research Unit**

Admin. Contact: Mrs. M. Woolsey, Secretary/Treasurer,  
Tel: (613) 738-3375.

Scientific Contact: L.G. Woolsey, President,  
Tel: (613) 521-8391.

Personnel: Total is 6 of which 4 are scientists and engineers.

Activities: Computer Science; CAD/CAM; Computer Graphics.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation.

Language(s) in Which Services are Provided: english.

**INRAD INDUSTRIAL R&D LTD**

128 Adelaide Street, Winnipeg, Manitoba, R3A 0W5.

**Research Unit**

Contact: Mr. Edward A. Speers, President,  
Tel: (204) 943-6870.

Personnel: Total is 8 of which 3 are scientists and engineers.

Activities: New product development: plastics, petroleum, chemical engineering, agriculture, energy, solar, hydrogen detection, biomass conversion, electronics, new product development.

Facilities: Chemistry laboratory; machine shop; vacuum forming; injection moulding; extrusion machinery; design and drafting.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.

Language(s) in Which Services are Provided: english.

**INSTRUMAR LTD**

P.O. Box 13246, Station A, St. John's, Newfoundland, A1B 4A5.

#### **Research Unit**

Admin. Contact: Robert E. Eivian, Office Manager,  
Tel: (709) 726-8460.

Scientific Contact: Alastair Allan, President,  
Tel: (709) 726-8460.

Personnel: Total is 10 of which 4 are scientists and engineers.

Activities: Instrumar designs and manufactures precision instrumentation for research in the northern marine environment.

Facilities: Tempress Lead Bonder; CAD Systems.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.

Language(s) in Which Services are Provided: english.

#### **INSTRUMENTATION G.D.D. INC.**

Suite 200, 2406 Quatre-Bourgeois, Sainte-Foy, Québec, G1V 1W5.

#### **Research Unit**

Admin. Contact: Edwin Gaucher, Vice-président,  
Tel: (418) 659-3513.

Scientific Contact: Régis Desbiens, Président,  
Tel: (418) 659-3513.

Personnel: Total is 4 of which 2 are scientists and engineers.

Activities: Development of a portable electronic unit called "Chain-Level", which operates according to principles of hydrostatic pressure, thus making it possible to take elevation measurements accurate to within 0.2% without requiring visual contact between the points measured. It is ideal for use in forested regions. Development of a portable electronic unit called "Beep-Mat", which operates according to the metal detector principle. It is used in mining exploration to locate floats.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, testing and analysis.

Language(s) in Which Services are Provided: both english and french.

Note: Descriptive text has been translated from French.

#### **INSYSTEMS CORPORATION**

2255 Sheppard Avenue East, Suite W412, Willowdale, Ontario, M2J 4Y1.

#### **Integrated Software for Insurance Industry (Base System)**

Contact: Ron E. Reynolds, Vice-President, Research  
Director, Tel: (416) 495-0616.

Personnel: Total is 36 of which 26 are scientists and engineers.

Activities: Development of an integrated software system for insurance companies. The end product is then customized (when complete) to fit the particular end user. Development is presently in the pre-customization stage.

Facilities: IBM System 4361; Various IBM Terminals.

Current or Potential Work Performed for: self or parent company, other clients.

Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.

Language(s) in Which Services are Provided: both english and french.

#### **INTEG-INTERCONTINENTAL ENGINEERING LTD**

1155 West Pender Street, Vancouver, B.C., V6E 2P4.

#### **INTEG-Intercontinental Engineering Ltd.**

Admin. Contact: Brian A. Simons, Manager, Business  
Development, Tel: (604) 682-7841.

Scientific Contact: Ian Plumbley, Manager, Special Projects,  
Tel: (604) 682-7841.

Personnel: Total is 1 of which 1 is a scientist or engineer.

Activities: INTEG specializes in utility and industrial power systems. It performs R&D work for clients on an assignment basis in the following areas among others: wood waste and coal gasification, fluidized combustion, coal liquefaction, wood waste utilization, energy management.

Language(s) in Which Services are Provided: english.

#### **INTELLITECH CANADA LTD**

81 Metcalfe Street, Suite 400, Ottawa, Ontario, K1P 6K7.

#### **Intellitech Dasta Comm Research**

Admin. Contact: Dr. K.C. Toth, P. Eng., President,  
Tel: (613) 236-7803.

Scientific Contact: S.A. Mahmoud, Vice-President,  
Tel: (613) 236-7803.

Personnel: Total is 20 of which 14 are scientists and engineers.

Activities: Data encryption and security; HF and UHF/VHF packet radio communications; multi-microprocessor/fault tolerant architectures; distributed processing and database systems.

Facilities: Microprocessor development systems; VAX 11/730 mini-computer; data comm. analyzers; logic analyzers, scopes, signal generators, etc.

Current or Potential Work Performed for: self or parent company, government.

Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.

Language(s) in Which Services are Provided: english.

#### **INTER TECHNOLOGIES LTD**

1200-510 5th Street South West, Calgary, Alberta, T2P 3S2.

#### **Modelling and Data Systems Group**

Contact: Mr. Doug Davison, Vice-President, Modelling and Data Systems Group, Tel: (403) 266-0900.

Personnel: Total is 7 of which 6 are scientists and engineers.

Activities: Ice management computer workstations for use in Arctic offshore operations; ice motion forecast models; air quality dispersion computer models particularly for complex terrain; cloud physics and weather modification.

Facilities: Cessna Conquest turboprop with cloud physics equipment.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation.

Language(s) in Which Services are Provided: both english and french.

#### **Radar Group**

Contact: Mr. D.R. Inkster, Vice-President, Radar Group,  
Tel: (403) 266-0900.

Personnel: Total is 8 of which 8 are scientists and engineers.

Activities: Radar image display systems primarily for airborne and marine radar for use in ice-infested waters.

Facilities: Cessna Conquest turboprop with synthetic aperture radar (SAR); Cessna Conquest turboprop with SLAR; airborne radar downlink; dedicated Masscomp 500 super micro for image research.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation.

Language(s) in Which Services are Provided: english.

#### **Remote Sensing Group**

4th Floor, 785 Carling Avenue, Ottawa, Ontario, K1S 5H4.

Contact: M. Kirby, Vice-President, Remote Sensing,

Tel: (613) 563-4343.

Personnel: Total is 15 of which 5 are scientists and engineers.

Activities: Remote sensing applications research; Radars, multispectral scanning, laser devices, thermal infrared; Hardware and software for image analysis; Integration of data from satellite, aircraft sources.

Current or Potential Work Performed for: other clients.

Nature of Work Performed for Others: contract R&D, consultation.

Language(s) in Which Services are Provided: both english and french.

#### **INTERACTIVE CIRCUITS AND SYSTEMS LTD**

3101 Hawthorne Road, Ottawa, Ontario, K1G 3V8.

##### **Research Unit**

Admin. Contact: Mrs. S. Pennington, Office Manager,

Tel: (613) 521-0590.

Scientific Contact: Dr. D. Roy, President,

Tel: (613) 521-0699.

Personnel: Total is 11 of which 6 are scientists and engineers.

Activities: Real-time digital signal processor for applications in sonar, radar, communications, instrumentation, etc.

Facilities: Mini/Micro computers; spectrum analyzers; logic analyzers; oscilloscopes; power supplies; mechanical workshop.

Current or Potential Work Performed for: government, other clients.

Nature of Work Performed for Others: contract R&D.

Language(s) in Which Services are Provided: english.

#### **INTERCONTINENTAL DATA CONTROL CORPORATION LTD**

2373 Stevenage Drive, Ottawa, Ontario, K1G 3W1.

##### **Engineering Division**

Admin. Contact: Mr. Sandy Farrell, Operations Manager,

Tel: (613) 733-4440.

Scientific Contact: Ameer Jinah, Engineering Manager,

Tel: (613) 733-4440.

Personnel: Total is 15 of which 6 are scientists and engineers.

Activities: Telecommunications, specializing in data transmission, modulation and demodulation using microprocessors.

Facilities: Wide range of electronic test equipment including microcomputers and PROM programmers.

Current or Potential Work Performed for: self or parent company, government.

Nature of Work Performed for Others: contract R&D.

Language(s) in Which Services are Provided: english.

#### **INTERNATIONAL HARVESTER CANADA LIMITED**

208 Hillyard Street, Hamilton, Ontario, L8N 3S5.

##### **Chatham Truck Plant, Engineering Centre**

508 Richmond Street, Chatham, Ontario, N7M 5M4.

Admin. Contact: W.C. McConnachie, Director, Technical Services, Tel: (416) 549-5231.

Scientific Contact: N.H.E. Speller, Chief Engineer,

Tel: (416) 352-1200.

Personnel: Total is 15 of which 14 are scientists and engineers.

Activities: Medium and heavy duty truck design.

Facilities: CAD/CAM equipped design office; prototype production shop.

Current or Potential Work Performed for: self or parent company.

Nature of Work Performed for Others: testing and analysis.

Language(s) in Which Services are Provided: english.

#### **INTERNATIONAL PAINTS (CANADA) LIMITED**

6615 Park Avenue, Montréal, Québec, H2V 4P6.

##### **Protective and Marine Coatings Development Lab.**

188 New Toronto St., Toronto, Ontario, M8V 2E8.

Admin. Contact: B.A. Hebdige, V.P. Technical,

Tel: (514) 273-7511.

Scientific Contact: L.D. Eccleston, Technical Mgr.,

Tel: (416) 252-5171.

Personnel: Total is 5 of which 5 are scientists and engineers.

Activities: Development specialized marine coatings, including antifouling, anticorrosive, and antiabrasion; development specialized protective coatings including anticorrosive and antiabrasion.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D.

Language(s) in Which Services are Provided: english.

#### **INTERNATIONAL SUBMARINE ENGINEERING**

2601 Murray St, Port Moody, British Columbia, V3H 1X1.

##### **ISE Research**

1734 Broadway, Port Coquitlam, British Columbia, V3C 2M8.

Contact: Michael MacDonald, Vice President,

Tel: (604) 937-3421.

Personnel: Total is 45 of which 10 are scientists and engineers.

Activities: Underwater Vehicles (Submersibles); ROV (Remote Operated Vehicles); Recreational Submarine and Anamatonics.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D.

Language(s) in Which Services are Provided: english.

#### **INTERNATIONAL TELEMETRICS LTD**

261 West 64th Avenue, Vancouver, British Columbia, V5X 2L7.

##### **Research Unit**

Contact: F. Petersohn, President, Tel: (604) 324-1230.

Personnel: Total is 6 of which 6 are scientists and engineers.

Activities: Electronic circuit design; integrated circuit design; computer graphics.

Current or Potential Work Performed for: other clients.

Nature of Work Performed for Others: contract R&D.

Language(s) in Which Services are Provided: english.

#### **INTERTECH ENGINEERING CORPORATION**

199 Bay St. Suite 503, Toronto, Ontario, M5J 1L4.

##### **Research Unit**

Contact: R. Isles, President, Tel: (416) 366-2135.

Personnel: Total is 10 of which 7 are scientists and engineers.

Activities: Materials (metallic and non metallic) - seals gaskets; Process systems; Valves - 3 way, steam-gate; Mechanical components and items - therapy chair; Atmospheric dryers - industrial, very low dew point; Fusion; Nuclear; Stress analysis; Elastomers; Reinforced plastics; Measurement of temperature, pressure, flow, dew point; Engineered Barriers - doors, panels; Zero leakage devices - Valve activator.

Current or Potential Work Performed for: self or parent company, government, other clients.  
Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.  
Language(s) in Which Services are Provided: english.

#### **INVERPOWER CONTROLS LTD.**

835 Harrington Court, Burlington, Ontario, L7N 3P3.

##### **Research Unit**

Admin. Contact: S.B. Dewan, President,  
Tel: (416) 639-4692.

Scientific Contact: L. Lansing, Chief Engineer,  
Tel: (416) 639-4692.

Personnel: Total is 4 of which 3 are scientists and engineers.

Activities: Power electronics systems; Inverters for variable speed AC drives; Power supplies for fusion reactors; Computer power supplies; Special purpose power supplies for induction heating, induction melting, induction stirring, ozone generation, anti-corrosion systems, plastic treating etc.

Facilities: 300 HP Dynamometer MG set.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.

Language(s) in Which Services are Provided: english.

#### **INVESTIM INC.**

70 Avenue Maplewood, Outremont, Québec, H2V 2M1.

##### **Investim Informatique**

Contact: Yves Methot, Vice-président, Tel: (514) 277-2161.

Personnel: Total is 10 of which 3 are scientists and engineers.

Activities: Development of information processing. Development of electronic components to connect peripheral components.

Current or Potential Work Performed for: other clients.

Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.

Language(s) in Which Services are Provided: both english and french.

Note: Descriptive text has been translated from French.

#### **IPL INC.**

140 Commercial, St-Damien, Bellechasse, Québec, G0R 2Y0.

##### **Research Unit**

Admin. Contact: Jean-Marie Chabot, Directeur, R-D,  
Tel: (418) 789-2880.

Scientific Contact: Marcel Riou, Adjoint, recherches,  
Tel: (418) 789-2880.

Personnel: Total is 5 of which 2 are scientists and engineers.

Activities: We specialize in injection moulding of thermoplastics. Our research goal is to mould various geometric shapes in a laboratory in order to gain an understanding of the volumetric and linear shrinkage that occurs after moulding. The data we obtain are used to develop a mathematical model.

Facilities: Injection equipment, 120 TX microprocessor; four variously shaped moulds; 2500 kg capacity Instron; moulding press; temperature regulators; and precision measuring instruments and scale.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: french.

Note: Descriptive text has been translated from French.

#### **IPSCO INC**

P.O. Box 1670, Regina, Saskatchewan, S4P 3C7.

#### **IPSCO Research and Development Centre**

Contact: Mr. M. Kostic, Head of R&D,

Tel: (306) 949-3442.

Personnel: Total is 13 of which 6 are scientists and engineers.

Activities: Field of specialization is steel and pipe manufacturing; development and evaluation of new grades of casing and tubing; development and evaluation of new grades of high-strength steel; development of high-strength, high-toughness submerged-arc welds for spiral pipes; development of special alloys for corrosive environment; research and development of new practices for producing and rolling of high-quality steels; research and development of practices for improving the productivity and quality of pipes.

Facilities: Scanning electron microscope; Image analysis system; Material Testing System; Drop weight tester.

Current or Potential Work Performed for: self or parent company.

Nature of Work Performed for Others: testing and analysis.

Language(s) in Which Services are Provided: english.

#### **ISTEC LIMITED**

1810 Highway 6 North, Hamilton, Ontario, L9J 1H2.

##### **Research Unit**

Admin. Contact: J.D. Creighton, Business & Marketing Manager, Tel: (416) 529-5132.

Scientific Contact: J.N. Leavitt, President,  
Tel: (416) 529-5132.

Personnel: Total is 22 of which 5 are scientists and engineers.

Activities: Graphics overlay onto NTSC, PAL, SECAM VIDEO; gyro stabilization; electro-optics; optical, infra-red, digital imaging, electro-optical-mechanical servos for lenses, cameras, sensors; gyrostabilized aerial borne antennas - UHF and Microwave; remotely controlled imaging.

Facilities: N.C. machining centre; optical and electronic instruments; micro development systems MC 6802; micro development system (80286).

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation.

Language(s) in Which Services are Provided: english.

#### **ITT BUSINESS COMMUNICATIONS**

171-175 Dawson Road, Guelph, Ontario, N1H 1A1.

##### **Research Unit**

175 Dawson Road, Guelph, Ontario, N1H 1A1.

Admin. Contact: Larry Valeriot, Mgr. P/IR,  
Tel: (519) 821-2000.

Scientific Contact: Orville Warner, Director of Engineering,  
Tel: (519) 821-2000.

Personnel: Total is 90 of which 50 are scientists and engineers.

Activities: Telecommunications; Voice & Data Business Systems

Facilities: VAX; CAO.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: english.

#### **IVI INCORPORATED**

CP 790, Courcellette, Québec, Québec, G0A 1R0.

##### **Laboratoire de recherche**

2500 boulevard Pie XI, Val-Belair, Québec, G0A 1G0.

Contact: Jean-Pierre Drolet, Vice-president,  
Tel: (418) 844-3711.

Personnel: Total is 19 of which 8 are scientists and engineers.

Activities: Development of small-calibre ammunition, materials science (aluminum, tungsten, ceramics).

Facilities: High-speed camera; X-ray equipment; indoor firing range; electronic data-acquisition system; injection press; high-temperature furnaces.

Current or Potential Work Performed for: self or parent company, other clients.

Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.

Language(s) in Which Services are Provided: both english and french.

Note: Descriptive text has been translated from French.

#### **J.A. FAGUY & FILS LTEE**

750 Montée de Liesse, St-Laurent, Québec, H4T 1P3.

##### **Research Unit**

Admin. Contact: Marcel Faguy, Gérant Général,  
Tel: (514) 341-3610.

Scientific Contact: Alain Coulombe, Chef Ingénieur,  
Tel: (514) 341-3610.

Personnel: Total is 4 of which 2 are scientists and engineers.

Activities: We are working on the development of products in the following fields: 12 to 1200 KW diesel generator units; 30-foot mobile lighting tower; truck and container refrigeration units.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: both english and french.

Note: Descriptive text has been translated from French.

#### **J.D. KOPPERNAES ENGINEERING LTD.**

1248 Bedford Highway, Bedford, Nova Scotia, B4A 1C6.

##### **Research Unit**

Admin. Contact: J.D. Koppernaes P. Eng., Chairman,  
Tel: (902) 835-8348.

Scientific Contact: Glenn Ross P. Eng., Vice-President,  
Tel: (902) 835-8348.

Personnel: Total is 6 of which 4 are scientists and engineers.

Activities: Air agitation of seaweed; anaerobic digester on fish meal effluent; anaerobic digester on cheese plant effluent; fish silage production from fish offal.

Current or Potential Work Performed for: government, other clients.

Nature of Work Performed for Others: contract R&D.

Language(s) in Which Services are Provided: english.

#### **J.L. ELECTRON LTEE**

137, rue St-Germain ouest, Rimouski, Québec, G5L 4B6.

##### **Océanographie**

Admin. Contact: Jacques Landry, Président directeur général, Tel: (418) 724-6811.

Scientific Contact: Marcel Bourget, Ingénieur, Recherche et développement, Tel: (418) 724-6811.

Personnel: Total is 7 of which 3 are scientists and engineers.

Activities: Electronic development of oceanographic equipment including: design; PC Board; software development; telemetry and telecommunications.

Facilities: Pressure chamber; tank; water column for pressure probe; RCA development system; IBM development system.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.

Language(s) in Which Services are Provided: both english and french.

Note: Descriptive text has been translated from French.

#### **JATOM SYSTEMS INC.**

600-294 Albert Street, Ottawa, Ontario, K1P 6E6.

##### **JSI Telecom**

Contact: Barry Stewart, Marketing Manager,  
Tel: (613) 236-6982.

Personnel: Total is 14 of which 8 are scientists and engineers.

Activities: R&D concentrated on employing new technology in design of products for commercial sales, specializing on analog & digital telecommunication products and applications.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D.

Language(s) in Which Services are Provided: english.

#### **JENIKE & JOHANSON LTD.**

260 Lesmill Road, Don Mills, Ontario, M3B 2T5.

##### **Research Unit**

Contact: David J. Goodwill, President, Tel: (416) 447-5847.

Personnel: Total is 4 of which 3 are scientists and engineers.

Activities: Jenike & Johanson, a consulting engineering firm specializing in the field of storage and flow of bulk solids, provides services to the materials handling and processing industries aimed at enabling plant equipment to work more reliably and efficiently. The basis for these services is our unique knowledge of the principles of solids flow that allows us to analyze equipment and processes. Our work usually involves the measurement of flow properties of bulk solids (ores, coal, chemicals, powders) using test procedures and equipment we have developed. Since our founding in 1966, we have measured flow properties for more than 3000 materials and applied our scientific design methods to bins, feeders and process equipment with a certainty which has been verified by hundreds of installations. Our method stresses the importance of the entire system, acting in unison, to obtain reliable flow. In the past few years, we have included the effects of entrained or flowing gas or liquids in moving beds of solids. This allows us to predict fluid/solid interactions such as settlement of fine powders due to gas escape and limiting flow rates of both fluids and solids. We have also designed ways to prevent segregation and to remix a segregated solid. As a result, we have patents on these designs and several other related patents concerning special elements are pending or under study.

Facilities: Jenike Shear Testers (2); Jenike Consolidation Bench (4); Glove Box for testing toxic or dangerous substances or for controlled temperature and humidity testing (1); Permeability Tester; Compressibility Tester; Segregation Test Device.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.

Language(s) in Which Services are Provided: english.

#### **JOHN DEERE WELLAND WORKS OF JOHN DEERE LIMITED**

Regional Road #68, Welland, Ontario, L3B 3N3.

##### **Research Unit**

Admin. Contact: S.R. Hiseler, General Manager,  
Tel: (416) 734-4501.

Scientific Contact: W.R. MacGregor, Manager, Product Engineering, Tel: (416) 734-4501.

Personnel: Total is 68 of which 20 are scientists and engineers.

Activities: Design and development of agricultural implements and attachments for farm tractors, specifically: agricultural loaders, rotary cutters, manure spreaders, rear blades, wagon gear and forage wagons, snowblowers.

Facilities: Stress coat and strain gauge; telemetry trailer with computer and recorders; finite element analysis; miscellaneous test fixture capabilities.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: english.

#### **JOHNSON MATTHEY LIMITED**

110 Industry Street, Toronto, Ontario, M6M 4M1.

##### **Development Department**

Admin. Contact: A.J. Frost, Secretary, Tel: (416) 763-5111.

Scientific Contact: D.R. Jordan, Mgr. Market Development, Tel: (416) 763-5111.

Personnel: Total is 4 of which 4 are scientists and engineers.

Activities: Electrical contacts: methods of fabrication, techniques of attachment, alloy development; brazing alloys: alloy development; jewellery alloys: alloy development, fabrication methods, property testing.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: english.

#### **JOLDON INVESTMENTS LIMITED**

3015 Kennedy Road, suite 207, Agincourt, Ontario, M1V 1E7.

##### **Joldon Diagnostics**

Contact: Dr. D.H. Segal, President, Tel: (416) 292-1699.

Personnel: Total is 4 of which 4 are scientists and engineers.

Activities: Development of immuno-diagnostic product lines for sale to human and veterinary labs.

Current or Potential Work Performed for: self or parent company.

Nature of Work Performed for Others: consultation.

Language(s) in Which Services are Provided: english.

#### **JONERGIN (1985) INC**

6200 Grande Allee,, St Hubert, Quebec, J3Y 1B6.

##### **Research Unit**

Contact: Tony Wong, President, Tel: (514) 878-3961.

Personnel: Total is 2 of which 2 are scientists and engineers.

Activities: Adhesives; printing; metallizing; coating and lamination.

Current or Potential Work Performed for: self or parent company.

Nature of Work Performed for Others: testing and analysis.

Language(s) in Which Services are Provided: both english and french.

#### **JORDAN & STE-MICHELLE CELLARS DIVISION OF T.G. BRIGHT COMPANY LTD.**

120 Ridley Road, St. Catharines, Ontario, L2R 7E3.

##### **Research Unit**

Admin. Contact: Josef Zimmerman, Research Director, Tel: (416) 688-2140.

Scientific Contact: J. Zimmermann, National Manager, Wine Production, Tel: (416) 688-2140.

Personnel: Total is 5 of which 4 are scientists and engineers.

Activities: Viticulture; Winemaking; Cider Producing.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: english.

#### **JOSEPH E. SEAGRAM & SONS, LTD.**

1430 Peel Street, Montréal, Québec, H3A 1S9.

Research Department, Joseph E. Seagram & Sons Ltd.

225 Lafleur Ave., Ville la Salle, Québec, H8R 3H2.

Contact: A. Peterson, Manager, Technical Services, Tel: (514) 366-2410.

Personnel: Total is 19 of which 15 are scientists and engineers.

Activities: Biochemical and microbiological studies on alcohol fermentation; process development and process improvement applied to alcoholic beverage production technology; new product development; flavour research.

Facilities: Fermentation pilot plant; computer facility; analytical instrumentation: GC; HPLC; UV; IR; AA.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: english.

#### **JOSEPH SKVARIL ARCHITECT LTD**

295, 10149-109 Street, Edmonton, Alberta, T5J 3M4.

##### **Research Unit**

Admin. Contact: Hermina Skvaril, Partner, Tel: (403) 428-0065.

Scientific Contact: Joseph Skvaril, MRAIC, MCIP, AICP, SAR, President, Tel: (403) 428-0065.

Personnel: Total is 2 of which 1 is a scientist or engineer.

Activities: Research in expandable wood frame structures and in transportation of the structures in self-containing packages.

Current or Potential Work Performed for: self or parent company.

Nature of Work Performed for Others: contract R&D.

Language(s) in Which Services are Provided: english.

#### **JOYTEC LTD**

1514 Fletcher Rd, Saskatoon, Saskatchewan, S7L 6A4.

##### **Research Unit**

Admin. Contact: Larry N. Machula, Chief Executive Officer, Tel: (306) 978-0200.

Scientific Contact: Mr. Martin Wacker, Head - Engineering, Tel: (306) 244-2288.

Personnel: Total is 4 of which 3 are scientists and engineers.

Activities: Electronics; Sensing devices to measure - pressure, kinetic energy, speed, proximity.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: english.

#### **KARHU-TITAN CANADA LIMITED**

110 Lauder Street, Cowansville, Québec, J2K 2K9.

##### **Karhu-Titan Research & Development**

Contact: Heiner Adam, R&D Manager, Tel: (514) 263-3331.

Personnel: Total is 2 of which 2 are scientists and engineers.

Activities: Development of new cross-country skis and hockey sticks and manufacturing processes for these products.

Facilities: Miscellaneous testing equipment.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: both english and french.

**KB ELECTRONICS LIMITED**

150 Bluewater Road, Bedford, Nova Scotia, B4B 1G9.

**Defence Group**

Admin. Contact: Heidi Baumgartner, Vice-President,  
Tel: (902) 835-7268.

Scientific Contact: Joe Drobnik, Manager, Engineering,  
Tel: (902) 835-7268.

Personnel: Total is 14 of which 8 are scientists and engineers.

Activities: Specialize in electrical power conversion UPS-systems and frequency changer low to high power for defence applications. Also develop RF circuits transmitters/receivers up to 250 MHz for special purpose. High frequency switching power supplies and converters/inverters.

Facilities: Environmental chambers; vibration system; computerized EMI testing; high power 400 Hz

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: english.

**KBM FORESTRY CONSULTANTS INC.**

360 Mooney Street, Thunder Bay, Ontario, P7B 5R4.

**Research Unit**

Admin. Contact: Herb Bax, President, Tel: (807) 344-0811.

Scientific Contact: David Reid, Project Forester,  
Tel: (807) 344-0811.

Personnel: Total is 2 of which 2 are scientists and engineers.

Activities: Reforestation equipment development; reforestation techniques (e.g., specialized planting, seeding, etc.); growth studies.

Facilities: Herbicide applicator for a scarifier.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation.

Language(s) in Which Services are Provided: english.

**KEEPRITE INC**

44 Elgin Street, Brantford, Ontario, N3T 5P4.

**Research Unit**

Contact: William J. McLean, Vice President of Research & Development, Tel: (519) 753-8471.

Personnel: Total is 35 of which 7 are scientists and engineers.

Activities: Development of Air Conditioning & Refrigeration Products

Facilities: Colorimeter & phyacronetric rooms ; wind tunnels

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: english.

**KELLOGG SALADA CANADA INC.**

6700 Finch Avenue West, Rexdale, Ontario, M9W 5P2.

**Research and Development**

Admin. Contact: L.N. Kuzminski, Vice President, Science and Quality, Tel: (416) 675-5242.

Scientific Contact: K.R. McMillan, Manager, Research and Development, Tel: (416) 675-5229.

Personnel: Total is 19 of which 15 are scientists and engineers.

Activities: Nutrition Research/Product Development - wide range of food products.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: english.

**KELRESEARCH CORPORATION**

Suite 9, 850-A Alness Street, Downsview, Ontario, M3J 2H5.

**Research Unit**

Contact: Dr. T.B. Low, President, Tel: (416) 736-0521.

Personnel: Total is 3 of which 3 are scientists and engineers.

Activities: Consultants in atmospheric science and technology: meteorological consulting; cloud physics (field work and modelling); climatology (data analysis and applications); air quality (field studies and modelling); micrometeorology; marine meteorology; sea ice (modelling of movement); sea state (hindcast modelling); atmospheric and sea spray icing (field studies and modelling); air craft data acquisition systems development.

Facilities: Microcomputers and peripherals; data acquisition systems.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation.

Language(s) in Which Services are Provided: english.

**KENTING EARTH SCIENCES LIMITED**

PO Box 8250 Terminal PO, Ottawa, Ontario, K1G 3H7.

**Research Unit**

380 Hunt Club Road, Ottawa, Ontario, K1G 3N3.

Contact: D.C. Fitzsimmons, Vice-President,  
Tel: (613) 521-1630.

Personnel: Total is 6 of which 4 are scientists and engineers.

Activities: Airborne geophysical equipment and data processing; photogrammetric data processing. As a contractor, in the earth resources field, Kenting Earth Sciences Limited is involved in the development of systems for the collection, processing and presentation of resources data. This includes: - the development of data acquisition systems for the collection of geophysical, topographic, hydrographic and other resources related data bases, - the integration of systems for the processing of collected data and its final presentation as maps or charts.

Facilities: Lab facilities; aircraft modified for survey use; two HP computer systems; one GA minicomputer.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.

Language(s) in Which Services are Provided: both english and french.

**KER, PRIESTMAN & ASSOCIATES LTD.**

300-2659 Douglas Street, Victoria, British Columbia, V8T 4M3.

**Research Unit**

Admin. Contact: G.S. Prince, President,  
Tel: (604) 388-6676.

Scientific Contact: J.B. Brodie, Manager, Environmental Division, Tel: (604) 388-6676.

Personnel: Total is 35 of which 20 are scientists and engineers.

Activities: Surface Water Hydrology & Hydraulics. Waste Treatment and Pollution Control. Environmental Evaluation - Mining. Software Development.

Current or Potential Work Performed for: government, other clients.

Nature of Work Performed for Others: contract R&D, consultation.

Language(s) in Which Services are Provided: english.

## KER-TRAIN SYSTEMS LIMITED

P.O. Box 40, R.R. 1, Kingston, Ontario, K7L 4V1.

### Research Unit

Contact: John Hugh Kerr, Chief of Design,  
Tel: (613) 546-4575.

Personnel: Total is 3 of which 3 are scientists and engineers.

Activities: Mechanical Transmission Field - Variator Technology (all gear infinitely and variable transmission systems that employ non-circular gears and Spiroidal Overrunning clutches); Spiroidal Overrunning clutches (indexing to 60 Hz, backstop any cap.); Binary Logic Incrementally Variable Transmission Technology (vehicle, tool and machinery drives etc.).

Facilities: PDP-11 Plotters etc.

Current or Potential Work Performed for: government, other clients.

Nature of Work Performed for Others: contract R&D.

Language(s) in Which Services are Provided: both english and french.

## KERT CHEMICAL INDUSTRIES INC

171 Fenmar Drive, Weston, Ontario, M9L 1M8.

### Research Unit

Admin. Contact: Bill Hardin, Chief Financial Officer,  
Tel: (416) 749-5220.

Scientific Contact: M. Gmazel, Technical Services Manager,  
Tel: (416) 749-5220.

Personnel: Total is 8 of which 7 are scientists and engineers.

Activities: Polymer coatings for floors; industrial and institutional cleaners; laundry compounds (I&I); dishwashing compounds (I&I); janitorial care products; low temperature industrial cleaners (80-110 degrees F); low temperature iron and multi metal phosphates (80-110 degrees F); moderate temperature Zinc Phosphate (125-160 degrees F); improvement of lubricants performance (wet, dry and reactive lubes and metal working fluids); paint stripping and paint booth compounds; ongoing development in corrosion protection fuel, related to in process materials, finished goods, as well as protection of process equipment.

Current or Potential Work Performed for: self or parent company, other clients.

Nature of Work Performed for Others: testing and analysis.

Language(s) in Which Services are Provided: english.

## KIDD CREEK MINES LTD

B-2002,, Timmins, Ontario, P4N 7K1.

### Res/Dev & Productivity, Kidd Creek Mines

B-2002, Timmins, Ontario, P4N 7K1.

Admin. Contact: D. J. Kemp, Manager, Research & Development, Tel: (705) 235-7583.

Scientific Contact: Dr. J.D. Scott, Sr. Staff Scientist,  
Tel: (705) 235-7573.

Personnel: Total is 46 of which 26 are scientists and engineers.

Activities: To provide process technical support to operations. Perform basic research and development relating to the operations in the fields of minerology, metallurgy and chemical engineering. Liaison with outside R&D organisations (universities, government and private groups) as it relates to range of technological applications within the company.

Facilities: Superpanner; Denver D-1 Flotation machines; 32 litre Agitair Flotation Machine; Cyclosizer; Dispatch Oven; Magnetic Separator Drum Type; High Intensity Jones Magnetic Separator; Mineral Jig; 3/4" Vertical Pump; Laboratory Cyclone; Muffle Furnace; Demineralizer; Gravity Table; Diamond Saw; Section

Polisher; Vacuum Oven; 15 Cubic Foot Freezer; Vacuum Pumps; Ro-Tap Screen Shaker; Leitz Reflective Light High Power Microscope; pH Meters; Laboratory Bay Mills; Pebble Mill; Set of Denver Rolls; Electronic Balancer; Triple Beam Mechanical Balances; Denver Bench Filters; Hayward Gordon Mixer; Centrifuge; Automatic Section Polishers; Buckler Specimen Press; Wemco No.3 Flotation Cells; Denver No.5 & No.8 Flotation Cells; Denver 1" Sand Pumps; Sala 1-1/2" Vertical Pumps; 3" Vacuum Pump; Denver 4' Filters; Bartles-Mozley Concentrator; G.E. Elliot Spiral; 6' by 4' Ball Mill; 4' by 3' Regrind Mill; Denver 10' Thickener; Denver 8' Thickener; Screw Type Classifier; 3' Screen; Galigher 1-1/2" Sump Pumps; Dispatch Oven; Low Pressure Autoclave; Crystalizer; 4' Steam Tanks; 3' by 4' Conditioners; Fine Ore Bin and Conveyor; Laboratory Scale s/s Autoclaves; HSA Reactor; Mini/Medium Size Continuous Hydromet Pilot Plants, compromising leach tanks, thickeners and s/l separation equipment.

Current or Potential Work Performed for: self or parent company, other clients.

Nature of Work Performed for Others: testing and analysis.

Language(s) in Which Services are Provided: english.

## KING AGRO INC

P.O. Box 1088, Chatham, Ontario, N7M 5L6.

### Corn Breeding Unit

Admin. Contact: F. Scott-Pearse, Director of Research,  
Tel: (519) 354-3210.

Scientific Contact: S. Kuzir, Corn Breeder,  
Tel: (519) 354-3210.

Personnel: Total is 16 of which 4 are scientists and engineers.

Activities: Hybrid corn breeding; inbred development; population improvement; hybrid testing; foundation seed production.

Facilities: 200 acre research farm.

Current or Potential Work Performed for: self or parent company.

Nature of Work Performed for Others: testing and analysis.

Language(s) in Which Services are Provided: both english and french.

### Cereal Research Unit

RR #2, Listowel, Ontario, N4W 3G7.

Admin. Contact: F. Scott-Pearse, Director of Research,  
Tel: (519) 354-3210.

Scientific Contact: K. Kennema, Manager, Cereal Research,  
Tel: (519) 291-2201.

Personnel: Total is 5 of which 2 are scientists and engineers.

Activities: Cereal variety selection; cereal intensive management research.

Facilities: 40 acre research farm.

Current or Potential Work Performed for: self or parent company, other clients.

Nature of Work Performed for Others: contract R&D, testing and analysis.

Language(s) in Which Services are Provided: both english and french.

### Pulse Breeding Unit

Admin. Contact: F. Scott-Pearse, Director of Research,  
Tel: (519) 354-3210.

Scientific Contact: N. Bradner, Pulse Breeder,  
Tel: (519) 354-3210.

Personnel: Total is 7 of which 1 is a scientist or engineer.

Activities: Soyabean breeding; variety testing; breeder's seed production; mung bean breeding.

Facilities: 200 acre research farm.  
Current or Potential Work Performed for: self or parent company.  
Language(s) in Which Services are Provided: english.

#### **KINGSMILL FOODS COMPANY LIMITED**

1399 Kennedy Road, Unit 17, Scarborough, Ontario, M1P 2L6.

##### **Research Unit**

Admin. Contact: Ms. Dorion Kingsmill, President,  
Tel: (416) 755-1124.  
Scientific Contact: Ms. Marlina Tesolin, Technical Services Manager, Tel: (416) 755-1124.  
Personnel: Total is 2 of which 2 are scientists and engineers.  
Activities: Allergy related food: gluten free, low protein; hot chocolate; crystal drinks.  
Current or Potential Work Performed for: self or parent company.  
Nature of Work Performed for Others: testing and analysis.  
Language(s) in Which Services are Provided: english.

#### **KNUDSEN ENGINEERING LIMITED**

77 Gore Street, Perth, Ontario, K0A 3G0.

##### **Research Unit**

Admin. Contact: D. Eric Knudsen, Secretary/Treasurer,  
Tel: (613) 836-7344.  
Scientific Contact: Donald C. Knudsen,  
Secretary/Treasurer, Tel: (613) 836-7344.  
Personnel: Total is 7 of which 3 are scientists and engineers.  
Activities: Knudsen Engineering Limited is a 4 year old digital electronics firm with two distinct areas of expertise: digital imaging systems for the remote sensing industry and underwater acoustics, particularly as related to arctic conditions, ice-covered waters and oil spill reconnaissance. Recent research and development within the area of remote sensing have included the development of two systems, an airborne colour display and a processor system. The display system generates a real-time in-flight video presentation of data produced by a digital linescan imager. The processor system, also for use with linescan imager, digitizes up to 12 channels of analog video, correcting both radiometrically and spatially while transmitting to a digital data recording system. Development of a prototype digital acoustic imaging system is now underway. The product will be functionally equivalent to an underwater television camera which uses sound instead of light to form the image. The new design, for which patents are pending, occupies a functional niche between that of conventional video technology and present high resolution sonar, with additional capabilities. The concept combines the range and adverse environment capabilities of sonar with the functional and operational simplicity of conventional video.

Facilities: 2 Digital Equipment Corporation computers.  
Current or Potential Work Performed for: self or parent company, government, other clients.  
Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.  
Language(s) in Which Services are Provided: english.

#### **KOM INC.**

145 Spruce Street, Ottawa, Ontario, K1R 6P1.

##### **KOM, R&D Group**

Admin. Contact: Robert Gervais, General Manager,  
Tel: (613) 238-7766.  
Scientific Contact: Wayne Bradley, R&D Manager,  
Tel: (613) 238-7766.

Personnel: Total is 7 of which 4 are scientists and engineers.

Activities: The R&D group design and develop software and hardware products and systems to be manufactured and sold to the general computer market place; Fields of specialization: Microprocessor board products that are plug compatible to Q-bus and VME bus computer systems. These boards act as coprocessor to the host to perform real time input/output tasks; High capacity write once optical disk systems that are to be used as multi-user file servers and data acquisition systems (data loggers).

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: both english and french.

#### **KROY UNSHRINKABLE WOOLS LIMITED**

19 Duncan Street, Toronto, Ontario, M5H 3H1.

##### **Research Unit**

Admin. Contact: N.H. Cruickshank, President,  
Tel: (416) 599-9350.  
Scientific Contact: Dr. Laval Yan, Director of Research,  
Tel: (416) 366-8954.  
Personnel: Total is 9 of which 8 are scientists and engineers.  
Activities: Development of methods of treating Wool Tops, Wool Fabrics and Loose Wool to render them machine washable; Development of anti-microbials for preserving textiles, plastics, paint, wood, adhesives and leather; Development of textile finishes.  
Facilities: Normal spectrometers; Spectrophotometer; Gas analysis etc.  
Current or Potential Work Performed for: self or parent company, other clients.  
Nature of Work Performed for Others: consultation, testing and analysis.  
Language(s) in Which Services are Provided: both english and french.

#### **L.A.S.E.R. TECHNOLOGY INC**

19 Union Street North, Melbourne, Ontario, N0L 1T0.

##### **Research Unit**

Contact: Ted Spencer, President, Tel: (519) 289-5900.  
Personnel: Total is 2 of which none are scientists and engineers.  
Activities: Scanning laser receivers - development for surveying and machine elevation control; gravity/horizon reference tilt sensing and control; single-chip computer software development; single-chip computer system design.  
Facilities: Motorola Hardware/Software Development System.  
Current or Potential Work Performed for: self or parent company, government, other clients.  
Nature of Work Performed for Others: contract R&D.  
Language(s) in Which Services are Provided: english.

#### **LAB VOLT QUEBEC LTEE**

2120 Lavoisier, Ste-Foy, Québec, G1N 4B1.

##### **Research Unit**

Admin. Contact: Guy Goupil, Président,  
Tel: (418) 681-6346.  
Scientific Contact: Gilles Delisles, Directeur technique,  
Tel: (418) 681-6346.  
Personnel: Total is 11 of which 7 are scientists and engineers.  
Activities: Applied research in the field of analog, digital, aerial and microwave communications for the educational market.

Current or Potential Work Performed for: self or parent company.  
Language(s) in Which Services are Provided: french.  
Note: Descriptive text has been translated from French.

#### **LAB-ELITE LTEE/LTD**

1070 Bleury, Suite 600, Montréal, Québec, H2Z 1N3.

##### **Research Unit**

Admin. Contact: Mr. Raphael Kolb, Secretary/Treasurer,  
Tel: (514) 866-6664.

Scientific Contact: Dr. Asher Elcibas, President,  
Tel: (514) 866-6664.

Personnel: Total is 5 of which 4 are scientists and engineers.

Activities: Lab-Elite has performed R&D projects in the following fields: Solid waste disposal for environmental applications; extraction of essential oils from natural sources for food, cosmetic and pharmaceutical applications; extraction of natural colors from natural sources for food and pharmaceutical applications; waste recycling for various industries.

Facilities: HPLC; Gas chromatographs; Atomic Absorption Spectrophotometer; I.R.U.V. Spectrophotometer; GC-MS; X-Ray Diffraction.

Current or Potential Work Performed for: government, other clients.

Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.

Language(s) in Which Services are Provided: both english and french.

#### **LABATT BREWING COMPANY LIMITED**

P.O. Box 69, 2 1st Canadian Place, Toronto, Ontario, M5K 1E7.

##### **Production Research Department**

150 Simcoe Street, London, Ontario, N6A 4M3.

Admin. Contact: D.C. Chunn, Technical Services Manager,  
Tel: (519) 663-5050.

Scientific Contact: G.G. Stewart, Director, Research and Quality Control, Tel: (519) 663-5050.

Personnel: Total is 29 of which 24 are scientists and engineers.

Activities: Hop studies; beer staling; genetic manipulation; antibacterial activity in yeasts; biochemistry and genetics of starch and pentose utilizing yeast; extracellular protease activity in yeast; malt development; anaerobic digestion; microbiological stabilization of beer.

Facilities: Micro manipulator; mass spectrometer.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.

Language(s) in Which Services are Provided: english.

#### **LABORATOIRES NORDIC INC**

2775 rue Bovet, Laval, Québec, H7S 2A4.

##### **Affaires scientifiques**

Admin. Contact: Mr. Michel Guérin, Gérant général,  
Tel: (514) 331-9220.

Scientific Contact: Dr. D. Bensemana, Directeur, Affaires scientifiques, Tel: (514) 331-9220.

Personnel: Total is 5 of which 4 are scientists and engineers.

Activities: Clinical research, drug development; development of new therapeutic applications for certain types of drugs (cardiology, gastroenterology, endocrinology); scientific information.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: both english and french.

Note: Descriptive text has been translated from French.

#### **LABORATOIRES UPSILON D.B. INC. (LES)**

795 boulevard Talbot, Chicoutimi, Québec, G7H 4B3.

##### **Research Unit**

Admin. Contact: M. Luc Bouchard, Directeur général,  
Tel: (418) 545-7161.

Scientific Contact: Ludovic Perelman/Yvon Lessard, ing.,  
Directeur département recherche/Directeur département développement

Personnel: Total is 20 of which 7 are scientists and engineers.

Activities: Data capture control and management systems in the transportation field for industry and agriculture; information processing and microprocessing; analysis, design and manufacture of special equipment for industry and, more generally: physical science and scientific analysis; microclimatic control; networking; development of software for all types of computers; development of electronic instrumentation systems; process control; micro-electronics.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation.

Language(s) in Which Services are Provided: both english and french.

Note: Descriptive text has been translated from French.

#### **LAKE CITY TECHNICAL PRODUCTS INC.**

5-1952 Spall Road, Kelowna, British Columbia, V1Y 4R1.

##### **Research Unit**

Contact: J. Scheltgen, President, Tel: (604) 860-2882.

Personnel: Total is 2 of which 2 are scientists and engineers.

Activities: Radio astronomy; data acquisition; agriculture/fruit quality testing; computer programs.

Facilities: Scanning electronic microscope.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.

Language(s) in Which Services are Provided: english.

#### **LAKEFIELD RESEARCH DIVISION OF FALCONBRIDGE LTD**

P.O. Box 40, Commerce Ct W., Toronto, Ontario, M5L 1B4.

##### **Research Unit**

185 Concession St., P.O. Box 430, Lakefield, Ontario, K0L 2H0.

Contact: R.S. Salter, Manager, Tel: (705) 652-3341.

Personnel: Total is 60 of which 12 are scientists and engineers.

Activities: Analytical services, classical and instrumental methods; fire assaying - mineralogical and petrographic studies; grinding investigations - physical separations (gravity, magnetic or electric); flotation studies; complete gold recovery plant-cyanidation, CIP, desorption, zinc pptn, electro-winning, and heap leaching; fluid-bed and hearth roasting; leaching at atmospheric pressure or elevated pressures and temperatures; process and flowsheet development; reagent development.

Facilities: XRF; XRD; integrated pilot plant for grinding, flotation, CIP.

Current or Potential Work Performed for: other clients.

Nature of Work Performed for Others: contract R&D.

Language(s) in Which Services are Provided: english.

#### **LAKESIDE RESEARCH - DIVISION OF LAKESIDE FEEDERS LTD**

Box 800, Brooks, Alberta, T0J 0J0.

#### **Lakeside Research**

Contact: Mr. R.E. Grimson, Manager of Research Division,  
Tel: (403) 362-3326.  
Personnel: Total is 8 of which 4 are scientists and engineers.  
Activities: Animal and meat research.  
Facilities: Feed, soil and water laboratory; animal research facilities.  
Current or Potential Work Performed for: self or parent company, government, other clients.  
Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.  
Language(s) in Which Services are Provided: english.

#### **LALLEMAND INC.**

1620 Préfontaine, Montréal, Québec, H1W 2N8.

##### **Research Unit**

Admin. Contact: Ginette Labrie, Contrôleur,  
Tel: (514) 522-2133.  
Scientific Contact: Jacques Goulet, Directeur scientifique,  
Tel: (514) 522-2133.  
Personnel: Total is 8 of which 7 are scientists and engineers.  
Activities: Yeast fermentation; bacterial fermentation; process engineering; drying over a fluidized bed; pilot plant.  
Facilities: Fermentors; dryers; centrifuge; GLC chromatography; pilot plant.  
Current or Potential Work Performed for: self or parent company, government, other clients.  
Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.  
Language(s) in Which Services are Provided: both english and french.  
Note: Descriptive text has been translated from French.

#### **LAMONTAGNE GEOPHYSICS LIMITED**

Suite 306, 49 Spadina Avenue, Toronto, Ontario, M5V 2J1.

##### **Research Unit**

Contact: Yves Lamontagne, President, Tel: (416) 596-1772.  
Personnel: Total is 4 of which 3 are scientists and engineers.  
Activities: Geophysical instrumentation: The development of wideband transient electromagnetic instruments for mineral exploration and depth sounding. Main recent topics are borehole measurement technology using fibre optics and microcomputer controllers. Geophysical data processing: numerical techniques for removing source effects from EM geophysical data and for the conversion of data into a geophysical model of the earth, high voltage programmable geophysical transmitter, piezo-electric and electromechanical exploration techniques.  
Facilities: Microcomputer development systems; high pressure testing apparatus; fibre optic instrumentation; digital signal processing development station.  
Current or Potential Work Performed for: self or parent company, other clients.  
Nature of Work Performed for Others: contract R&D, consultation.  
Language(s) in Which Services are Provided: both english and french.

#### **LAPP INSULATORS INC.**

P.O. Box 428, 100 Beddoe Drive, Hamilton, Ontario, L8N 3J2.

##### **Product Engineering**

P.O. Box 425, 100 Beddoe Drive, Hamilton, Ontario, L8N 3J2.  
Admin. Contact: Dennis W. L'Ami, General Manager,  
Tel: (416) 521-0104.

Scientific Contact: Terry A. Ferreira, Quality Assurance Manager, Tel: (416) 521-0104.

Personnel: Total is 4 of which 1 is a scientist or engineer.

Activities: R&D of Thermal, Mechanical, Electrical Characteristics of high voltage electrical distribution insulators.

Facilities: Electrical lab kiln; 2 lab dryers; lab batching and mixing equipment; R-Tap testing sieve shaker; viscometers; optical pyrometer; PH meter; ultrasonic equipment; microscopes; analytical scales; lab pug mill with vacuum de-airing system; mechanical test equipment 115 kilos; electrical impulse generators; high voltage flashovers to 300 K-UA, wet and dry cement testing equipment, clay analysis equipment.

Current or Potential Work Performed for: self or parent company, other clients.

Nature of Work Performed for Others: testing and analysis.

Language(s) in Which Services are Provided: english.

#### **LAVO LIMITEE**

1880, rue Chambly, Montréal, Québec, H1W 3J2.

##### **Research Unit**

Admin. Contact: Marie-Claire Girard, Directeur des services comptables, Tel: (514) 526-7783.  
Scientific Contact: M. Lazar Bernstein, Chimiste,  
Tel: (514) 526-7783.  
Personnel: Total is 2 of which 1 is a scientist or engineer.  
Activities: Cleaning products: bleach, fabric softeners, liquid detergents and window cleaners.  
Current or Potential Work Performed for: self or parent company.  
Language(s) in Which Services are Provided: french.  
Note: Descriptive text has been translated from French.

#### **LAWSON FLEXIBLE PACKAGING**

10 Akron Road, Toronto, Ontario, M8W 1T2.

##### **Lawson Flexible Packaging Technical Development Group**

Contact: Dr. Don Iwacha, Technical Manager,  
Tel: (416) 259-3731.  
Personnel: Total is 4 of which 4 are scientists and engineers.  
Activities: Development of specific flexible packaging structures to be used commercially by Lawson Flexible. These flexible packaging structures are new to Lawson Flexible and may be new to the industry as a whole. Development consists of preparatory laboratory work followed by the evaluation of products and processes on production equipment under the Technical Development Group supervision.  
Facilities: Gas chromatography; infrared spectroscopy; moisture vapour transmission.  
Current or Potential Work Performed for: self or parent company.  
Language(s) in Which Services are Provided: english.

#### **LC COMMUNICATIONS LTD**

P.O. Box 7197, Saskatoon, Saskatchewan, S7K 4J2.

##### **Research Unit**

Contact: Donald G. Cruickshank, President,  
Tel: (306) 933-1110.  
Personnel: Total is 2 of which 2 are scientists and engineers.  
Activities: Specialize in: telephone switching support equipment design using microprocessors; telephone loop design and system design for underground mining situations.  
Current or Potential Work Performed for: self or parent company, other clients.

Nature of Work Performed for Others: contract R&D, consultation.  
Language(s) in Which Services are Provided: english.

#### **LEITCH VIDEO LIMITED**

10 Dyas Rd, Don Mills, Ontario, M3B 1V5.

##### **Leitch Video International Inc.**

Admin. Contact: Robert A. Lehtonen, President,  
Tel: (416) 445-9640.

Scientific Contact: Donald Jackson, V.P. Engineering,  
Tel: (416) 445-9640.

Personnel: Total is 12 of which 5 are scientists and engineers.

Activities: Design and development of Broadcast Television and related equipment.

Current or Potential Work Performed for: self or parent company, other clients.

Nature of Work Performed for Others: contract R&D.  
Language(s) in Which Services are Provided: english.

#### **LEPAGE'S LIMITED**

50 West Drive, Bramalea, Ontario, L6T 2J4.

##### **Lepage's Limited Research & Development**

Contact: Julio A. Fernandez, Vice-President, Technical,  
Tel: (416) 459-1140.

Personnel: Total is 8 of which 4 are scientists and engineers.

Activities: Adhesives & Adhesion, Polymers, Coatings

Facilities: FTIR; Gas Chromatograph; Liquid Chromatograph; Gel Permeation Chromatography, Microscopy.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, testing and analysis.

Language(s) in Which Services are Provided: english.

#### **LESLIE JONES & ASSOCIATES INC.**

1a-324 Somerset Street West, Ottawa, Ontario, K2P 0J9.

##### **Research Unit**

Contact: Mr. Leslie Jones, President, Tel: (613) 233-2758.

Personnel: Total is 5 of which 3 are scientists and engineers.

Activities: Leslie Jones & Associates Inc. is a company dedicated to bringing a high standard of technical consulting services to the building industry. One of the main goals of the company is to promote the efficient use of energy in buildings through integration of design and research services in a single company. The range of services offered by the company includes: building energy systems analysis and computer modelling; building energy audits and energy management (scientific, technical and feasibility studies); heating, ventilation and air conditioning, electrical and lighting design; passive and active solar system design and research; development and evaluation of software for building energy system design.

Current or Potential Work Performed for: government, other clients.

Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.

Language(s) in Which Services are Provided: english.

#### **LIMAGRAIN CANADA INC.**

R.R. 2, Glanworth, Ontario, N0L 1L0.

##### **Research Unit**

Contact: Philippe Dupont, Sélectionneur de maïs,  
Tel: (519) 644-0403.

Personnel: Total is 20 of which 4 are scientists and engineers.

Activities: Selection of corn strains; development of corn hybrids adapted to the Canadian climate.

Facilities: Pneumatic seed drills; corn sheller; electronic moisture meters; storage and other buildings.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: both english and french.

Note: Descriptive text has been translated from French.

#### **LIMNOS LIMITED**

591 Liverpool Road, Pickering, Ontario, L1W 1R1.

##### **Research Unit**

Contact: John H. Neil, President, Tel: (416) 831-0697.

Personnel: Total is 10 of which 6 are scientists and engineers.

Activities: Sewage and Waste Treatment - Engineered Marsh Systems. Limnology - Fresh water algae and aquatic plants field oriented biological surveys; Fish invertebrates plants sediments water preparation of samples for contaminant analyses. Aquatic plant surveys - Quantitative estimates distribution (LORAN-Echosounder); species composition biomass; contract harvesting. Scientific survey - Scuba, biological & chemical field instrumentation; some laboratory analyses. Aquaculture - Heated water aquaculture; feasibility studies, culture technology, trout, yellow perch, eel, walleye.

Facilities: Basic biological & water laboratory; Vessels & boats - field collections; Scuba & hard hat diving; Plankton sampling & enumeration; Aquatic plant harvesters (Comm); Fish collection & sampling gear.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.

Language(s) in Which Services are Provided: english.

#### **LIMNOTERRA**

35A Shirk Place, Kitchener, Ontario, N2K 1R3.

##### **Environmental Electronics Group**

Contact: Dr. R.J. Planck, President, Tel: (519) 743-1780.

Personnel: Total is 3 of which 3 are scientists and engineers.

Activities: Ecological data acquisition using microprocessor based instrumentation. We have developed: 1. digital calipers; 2. a behavioral event recording system which can be used under water; 3. a low cost data logger; 4. a digital fish measuring board. We are still working on new ways for aging fish using otoliths and scales.

Facilities: Several microprocessor systems; various electronic equipment; various optical instruments.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation.

Language(s) in Which Services are Provided: english.

#### **LION INDUSTRIES LTD**

35 Trottier Bay, Winnipeg, Manitoba, R3T 3R3.

##### **Research Unit**

Contact: J.R. Lion, General Manager, Tel: (204) 475-8393.

Personnel: Total is 7 of which 4 are scientists and engineers.

Activities: Electrical and electronic products; solar energy products.

Facilities: General laboratory equipment.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, testing and analysis.

Language(s) in Which Services are Provided: english.

#### **LISLE-METRIX LTD**

49 Sheffield Street, Toronto, Ontario, M6M 3E5.

##### **Research Unit**

Contact: T.S. Medland, President, Tel: (416) 249-9151.

Personnel: Total is 3 of which 3 are scientists and engineers.

Activities: In general - analytical instrumentation; pH measurement; conductivity measurement, etc.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: english.

#### **LITTON SYSTEMS CANADA LTD**

25 Cityview Drive, Rexdale, Ontario, M9W 5A7.

##### **Research Unit**

Admin. Contact: T. McGuigan, Vice President, Marketing, Tel: (416) 249-1231.

Scientific Contact: L. Borth, Vice President, Engineering, Tel: (416) 249-1231.

Personnel: Total is 850 of which 500 are scientists and engineers.

Activities: Inertial instrument and system development; automatic test equipment; airborne surveillance radar systems; airborne display systems; computer modelling; systems integration.

Facilities: Extensive computer systems; test equipment; environmental test equipment; chemical and materials laboratory; VLSI design facility.

Current or Potential Work Performed for: self or parent company, government.

Nature of Work Performed for Others: contract R&D.

Language(s) in Which Services are Provided: english.

#### **LOGGING DEVELOPMENT CORPORATION**

5858 Côte-des-Neiges, Suite 215, Montréal, Québec, H3S 1Z1.

##### **Research Unit**

Contact: D.D. Hamilton, President, Tel: (514) 739-1791.

Personnel: Total is 4 of which 3 are scientists and engineers.

Activities: Forest harvesting and bioenergy.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D.

Language(s) in Which Services are Provided: english.

#### **LONDON LABORATORIES LIMITED**

1025 Hargrieve Road, London, Ontario, N6E 1P7.

##### **Research Unit**

Contact: Dr. J.F. Soltys, Research Director, Tel: (519) 681-2600.

Personnel: Total is 2 of which 1 is a scientist or engineer.

Activities: Research is carried out exclusively in the field of electroless plating of glass and plastics, mostly on the chemistry of silver and copper. Products resulting from this research include improvements in the manufacture of glass mirrors, thermos bottles, christmas ornaments, reflector light bulbs, solar reflectors, video and audio digital discs.

Facilities: Confidential.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: english.

#### **LONG MANUFACTURING LTD.**

656 Kerr Street, Oakville, Ontario, L6K 3E4.

#### **Advanced Engineering**

Admin. Contact: N. Avery, Chief Engineer,

Tel: (416) 845-4291.

Scientific Contact: B. Cheadle, Sr. Metallurgical Engineer,

Tel: (416) 845-4291.

Personnel: Total is 9 of which 5 are scientists and engineers.

Activities: Development studies related to joining metals with solders and brazing alloys. The activities are concerned mostly with copper, brass, aluminum for the development of heat exchangers in the field of automotive vehicles and industrial vehicles.

Facilities: Circulation stands for corrosion tests; salt spray corrosion chambers; tensile test machine; 2 - vibration test stands; 3 - heat transfer calorimeters for performance tests of product.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: english.

#### **LONGFORD EQUIPMENT INTERNATIONAL LIMITED**

41 Lamont Avenue, Scarborough, Ontario, M1S 1A8.

##### **Research Unit**

Admin. Contact: Ralph A. Viegas, Comptroller,

Tel: (416) 298-6622.

Scientific Contact: John A. Long, President,

Tel: (416) 298-6622.

Personnel: Total is 9 of which 5 are scientists and engineers.

Activities: Research and Development of Packaging Machinery specializing in Paper Handling equipment.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: english.

#### **LOVAT TUNNEL EQUIPMENT INC.**

441 Carlingview Drive, Rexdale, Ontario, M9W 5G7.

##### **Lovat Tunnel Equipment Inc. Research & Development**

Admin. Contact: G.R. Caseley, Controller,

Tel: (416) 675-3293.

Scientific Contact: G. Pokorny, Chief Engineer,

Tel: (416) 675-3293.

Personnel: Total is 10 of which 2 are scientists and engineers.

Activities: Applied research to determine ways of improving existing materials, devices and products. Development of the results of applied research for the purpose of creating new or improving existing materials, devices and products.

Current or Potential Work Performed for: self or parent company, government.

Nature of Work Performed for Others: contract R&D.

Language(s) in Which Services are Provided: english.

#### **LUCAS INDUSTRIES CANADA LTD, AEROSPACE DIVISION**

5595 Royalmount Avenue, Montréal, Québec, H4P 1J9.

##### **Research Unit**

Admin. Contact: M. Houghton, Contract Administrator, Tel: (514) 735-1536.

Scientific Contact: R.F. Moore, Manager, Operations Canada, Tel: (514) 735-1536.

Personnel: Total is 12 of which 5 are scientists and engineers.

Activities: To establish and improve the performance of electro-mechanical, hydro-mechanical and pneumatic components and systems. The effect of a wide range of adverse operating conditions on performance parameters can be investigated. Primary field is flight systems.

Facilities: High pressure fuel and hydraulic systems; high speed electrical or hydraulic drive systems.

Current or Potential Work Performed for: self or parent company, other clients.  
Nature of Work Performed for Others: testing and analysis.  
Language(s) in Which Services are Provided: english.

#### **LUMONICS INC.**

105 Schneider Road, Kanata, Ontario, K2K 1Y3.

##### **Lumonics Inc. (Kanata Operations)**

Contact: Dr. John Nilson, Director of Advanced R&D,  
Tel: (613) 592-1460.

Personnel: Total is 42 of which 13 are scientists and engineers.

Activities: Applied research on lasers and laser systems. Development of lasers and laser systems. Types of lasers include - pulsed gas lasers (CO<sub>2</sub> and excimer) and pulsed dye lasers. Types of systems include scientific, industrial (LaserMark (R)), medical, and customer support for J K Lasers Ltd. YAG laser systems. Other expertise includes high voltage technology.

Facilities: Full range of optical diagnostic equipment; full range of electronic diagnostic equipment.

Current or Potential Work Performed for: self or parent company, government.

Nature of Work Performed for Others: contract R&D.

Language(s) in Which Services are Provided: english.

#### **LYNN & JOHNSTON LABS INC.**

9420 Côte De Liesse, Lachine, Québec, H8T 1A1.

##### **Research Section**

Contact: J.D. Fenwick, General Manager,  
Tel: (514) 631-1837.

Personnel: Total is 3 of which 1 is a scientist or engineer.

Activities: Research is conducted under contract to Agriculture Canada on the elimination rate and metabolism of drugs which have been administered to racehorses at Agriculture Canada owned research centre.

Facilities: GC/Mass Spec; GC; LC.

Current or Potential Work Performed for: government.

Nature of Work Performed for Others: testing and analysis.

Language(s) in Which Services are Provided: english.

#### **M.J. O'CONNOR & ASSOCIATES LTD**

101, 4712-13th Street N.E., Calgary, Alberta, T2E 6P1.

##### **Research Unit**

Admin. Contact: M.J. O'Connor, President,  
Tel: (403) 250-9790.

Scientific Contact: J.G. Agar, Principal,  
Tel: (403) 250-9790.

Personnel: Total is 18 of which 10 are scientists and engineers.

Activities: Elevated temperature geotechnics; geomechanics; oil sand geotechnics; oil spill cleanup; hydrogeology; environmental engineering; geotechnical engineering; rock avalanches; marine geophysics; arctic engineering; engineering geology; materials testing.

Facilities: Oil spill model testing apparatus; permeameters; compression testing for soils; compression testing of oil sands; computer - specialized software.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.

Language(s) in Which Services are Provided: english.

#### **M2S ELECTRONIQUE LTEE**

1375 Charest ouest, local 31, Québec, Québec, G1N 2E7.

##### **Research Unit**

Admin. Contact: Bertrand Saucier, Directeur, bureau d'études, Tel: (418) 688-9000.

Scientific Contact: André Marchand, Directeur technique, Tel: (418) 688-9000.

Personnel: Total is 3 of which 1 is a scientist or engineer.

Activities: Development and improvement of modules and systems in telecommunications (radio interfaces, radio commands, paging systems, systems for a mobile radio network, encoders, decoders and so on) and control (vehicle detectors, telemetry systems and so on).

Current or Potential Work Performed for: government, other clients.

Nature of Work Performed for Others: contract R&D.

Language(s) in Which Services are Provided: both english and french.

Note: Descriptive text has been translated from French.

#### **MACDONALD, DETTWILER AND ASSOCIATES LTD**

3751 Shell Road, Richmond, B.C., V6X 2Z9.

##### **Research Unit**

Admin. Contact: Dr. Dennis J. Connor, Vice President - Corporate Development, Tel: (604) 278-3411.

Scientific Contact: Dr. Denis J. Connor, Vice-President - Corporate Development, Tel: (604) 278-3411.

Personnel: Total is 233 of which 142 are scientists and engineers.

Activities: MDA is pursuing a wide variety of R&D activities, including the following: advanced image analysis and classification of remotely sensed image data; digital processing of Synthetic Aperture Radar (SAR) image data; geometric correction of and geocoding of remotely sensed digital images; Digital Terrain Maps (DTM) produced from digital remotely sensed imagery; airborne multispectral digital imaging; meteorological satellite image data systems, and weather radar research; expert systems research, digital film recorder development; high speed signal processing.

Current or Potential Work Performed for: self or parent company, government.

Nature of Work Performed for Others: contract R&D.

Language(s) in Which Services are Provided: english.

#### **MACMILLAN BLOEDEL LIMITED**

1075 West Georgia Street, Vancouver, British Columbia, V6E 3R9.

##### **MacMillan Bloedel Research**

3350 East Broadway, Vancouver, British Columbia, V5M 4E6.

Admin. Contact: G.E. Plant, Manager, Administration,  
Tel: (604) 254-5151.

Scientific Contact: Dr. O.L. Forgacs, Sr. Vice-President,  
Tel: (604) 661-8499.

Personnel: Total is 113 of which 52 are scientists and engineers.

Activities: Wood harvesting; sawmilling; reconstituted wood products; high yield pulping; newsprint and groundwood specialty papers; containerboard; corrosion abatement.

Current or Potential Work Performed for: self or parent company, government.

Nature of Work Performed for Others: contract R&D.

Language(s) in Which Services are Provided: english.

##### **Land Use Planning Advisory Team**

65 Front Street, Nanaimo, British Columbia, V3L 4Y7.

Contact: W. Bourgeois, Manager, LUPAT,  
Tel: (604) 753-1112.

Personnel: Total is 23 of which 12 are scientists and engineers.

Activities: Silviculture; growth and yield; non-resource research (fish and wildlife).  
Current or Potential Work Performed for: self or parent company.  
Language(s) in Which Services are Provided: english.

#### **MACTAC CANADA**

100 Kennedy Road South, Brampton, Ontario, L6W 3E8.

##### **Mactac Canada, Technical Department**

Contact: Dr. B. Yawney, Vice-President, Technical,  
Tel: (416) 459-3100.

Personnel: Total is 9 of which 3 are scientists and engineers.

Activities: Development and/or selection of pressure-sensitive adhesive, silicone release, anchorage promoting, barrier, etc. Coatings and selection of paper, film, foil, foam, etc. Web stocks for manufacture of graphic arts and industrial laminates or coated products.

Facilities: Sundry paper, film and foil test equipment; instron physical tester; infrared spectrometer; viscosimeters.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: english.

#### **MADISON CHEMICAL INDUSTRIES INC.**

490 McGeachie Drive, Milton, Ontario, L9T 3Y5.

##### **Research Unit**

Admin. Contact: G. Gardin, Chemist, Tel: (416) 826-8310.

Scientific Contact: Dale Clark, Chemist,  
Tel: (416) 826-8310.

Personnel: Total is 1 of which 1 is a scientist or engineer.

Activities: Madison Chemicals manufactures polyurethane protective coatings. Our coatings have many end uses, but these coatings have the same basic function: to protect a surface from deterioration due to abrasion, weathering or chemical attack. Our R&D programs involve the invention of new products or upgrading existing products using existing technology. Sometimes it is even necessary to implement new technology to arrive at a product that has the desired physical characteristics.

Facilities: Impact tester; viscometer; hardness testers; adhesion tester.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: english.

#### **MAGIC PANTRY FOODS INC.**

26 Burford Road, Hamilton, Ontario, L8E 3C7.

##### **Research Unit**

Admin. Contact: Mr. A.A. Lyall, General Manager,  
Tel: (416) 561-5322.

Scientific Contact: Rhonda Ryandrich, Technical Director,  
Tel: (416) 561-5322.

Personnel: Total is 8 of which 8 are scientists and engineers.

Activities: Thermal processing characteristics of steam air retorting systems. Thermal processing characteristics of thin profile flexible and semi-rigid container. Packaging development aspects of thermally stabilised foods packed in flexible and semi-rigid container.

Facilities: Lagarde steam-air retorts and ancillary control mechanisms; various flexible and semi-rigid container sealing machines; various packaging material testing machines.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation.

Language(s) in Which Services are Provided: english.

#### **MALNAR INDUSTRIES LTD.**

903 Marion Street, Winnipeg, Manitoba, R2J 3T3.

##### **Refrigeration Systems - Industrial Process**

Admin. Contact: Kenneth J. Dalton, Vice-President,  
Tel: (204) 237-4881.

Scientific Contact: Ritta Shindel, Engineer,  
Tel: (204) 257-0116.

Personnel: Total is 40 of which 2 are scientists and engineers.

Activities: Field of R&D: industrial refrigeration; air flow analysis; heat transfer analysis; refrigeration evaporator capacity rating.

Facilities: Controlled environment calorimeter chamber; computer link to HTFS for analysis, monitoring and simulation.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: consultation, testing and analysis.

Language(s) in Which Services are Provided: english.

#### **MANITOBA HYDRO**

P.O. Box 815, 820 Taylor Ave., Winnipeg, Manitoba, R3C 2P4.

##### **Research Unit**

Contact: R.J. Karras, R&D Engineer, Tel: (204) 474-3465.

Personnel: Total is 8 of which 6 are scientists and engineers.

Activities: R&D in generation, transmission, distribution, utilization, and conservation of electricity. Specializing in high voltage direct current transmission.

Current or Potential Work Performed for: self or parent company, other clients.

Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.

Language(s) in Which Services are Provided: english.

#### **MARINE INDUSTRIES LIMITED**

1010 Sherbrooke West, Montreal, Quebec, H3A 2R7.

##### **Shipbuilding Division**

P.O. Box 550, Sorel, Quebec, J3P 5P5.

Admin. Contact: Guy Véronneau, V.P. - Shipbuilding,  
Tel: (514) 743-3351.

Scientific Contact: Michael J. Waters, Director of Engineering, Tel: (514) 743-3351.

Personnel: Total is 6 of which 3 are scientists and engineers.

Activities: Most of the work can be related to applied research and/or development in the field of ship construction. A patent right was obtained for a new Tug & Barge coupling mechanism. Improvement in method of construction is another field of research. Recently, work has been done on the creation of a software (Maripol) for the design of ship using CAD/CAM.

Facilities: CAD/CAM facilities using a PRIME computer with the Autokon software.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: both english and french.

##### **Hydro Electric**

P.O. Box 550, Sorel, Quebec, J3P 5P5.

Admin. Contact: J.P. Charbonneau, V.P. - Hydro-Electric,  
Tel: (514) 743-3351.

Scientific Contact: Marc Samson, Director of Engineering,  
Tel: (514) 743-3351.

Personnel: Total is 15 of which 10 are scientists and engineers. (Note: Part of their time is devoted to R&D.)

Activities: Applied research related to the field of hydro-electric is the main task of this group. It specialized in performance improvements of turbines and generators for large hydro-electric projects.

Facilities: CAD/CAM facilities using CALMA software on a VAX 780.

Current or Potential Work Performed for: self or parent company, other clients.

Nature of Work Performed for Others: testing and analysis.

Language(s) in Which Services are Provided: both english and french.

#### **Welding and Metallurgy**

P.O. Box 550, Sorel, Quebec, J3P 5P5.

Admin. Contact: Robert Beaudry, V.P. Production Services, Tel: (514) 743-3351.

Scientific Contact: Charles Billard, Director, Research, Tel: (514) 743-3351.

Personnel: Total is 9 of which 4 are scientists and engineers.

Activities: R&D is related to improvement in welding techniques. Training of personnel in the field of welding. Consultation work related to the field of welding. New technique of metal deposition on various surface.

Facilities: X-Ray unit; Universal testing machine; Impact Testing Equipment; Drop weight tester; Hardness testing equipment; Heat Treating Equipment.

Current or Potential Work Performed for: self or parent company, government.

Nature of Work Performed for Others: contract R&D, consultation.

Language(s) in Which Services are Provided: both english and french.

#### **Sometal, a Division of MIL**

217 rue Léonidas, Rimouski, Québec, G5L 7C1.

Admin. Contact: Paul Gremaux, V.P. Industrial Division, Tel: (418) 723-6508.

Scientific Contact: Gilles Tardig, General Manager, Tel: (418) 723-6508.

Personnel: Total is 3 of which 3 are scientists and engineers.

Activities: Development of a new type of forming equipment in partnership with a private inventor and the personnel of UQAR (Université du Québec à Rimouski).

Current or Potential Work Performed for: self or parent company, other clients.

Language(s) in Which Services are Provided: french.

#### **MARINE LOBSTER FARMS LTD**

P.O. Box 1028, Charlottetown, Prince Edward Island, C1A 7M4.

##### **Research Unit**

Water Street, Victoria, Prince Edward Island, C0A 2G0.

Admin. Contact: Hugh Paton, President, Tel: (902) 894-5161.

Scientific Contact: Edgar Mason, General Manager, Tel: (902) 658-2018.

Personnel: Total is 10 of which 4 are scientists and engineers.

Activities: Development of apparatus and method for holding and cultivating aquatic crustaceans. Recirculating biological seawater systems. Seawater procurement systems. Lobster and salmonid nutrition. Disease prevention.

Current or Potential Work Performed for: self or parent company, government.

Nature of Work Performed for Others: consultation.

Language(s) in Which Services are Provided: english.

#### **MARINE RESEARCH ASSOCIATES LTD.**

R.R. #2, Bocabec, St. Andrews, New Brunswick, E0G 2X0.

##### **Research Unit**

Admin. Contact: Jura McCullough, Manager, Tel: (506) 529-8809.

Scientific Contact: Arthur MacKay, President, Tel: (506) 529-8809.

Personnel: Total is 15 of which 11 are scientists and engineers.

Activities: Larval sorting and identification; Site Surveys for marine and freshwater aquaculture; Facility Design for marine and freshwater facilities; Biological collection and identification.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation.

Language(s) in Which Services are Provided: both english and french.

#### **MARITIME SCIENTIFIC SERVICES LTD.**

R.R. 5, Berwick, Nova Scotia, B0P 1E0.

##### **Research Unit**

Admin. Contact: J. de Mestral, Secretary Treasurer, Tel: (902) 538-9762.

Scientific Contact: Donald Bezanson, President, Tel: (902) 538-9828.

Personnel: Total is 2 of which 2 are scientists and engineers.

Activities: The company specializes in research related to oceanography. Current work involves the development of instrumentation to count, size and assess microscopic sea life by cytofluorometry. We have modified a medical cytofluorograph for oceanographic work, assembled an interface and produced software for this purpose. It is expected that this will aid in the measurement of biological productivity in the oceans. Key words for searching - oceanography, instrumentation, productivity analysis, interface development, plankton, fluorometry, cytofluorometry, application software.

Facilities: Microcomputers.

Current or Potential Work Performed for: government.

Nature of Work Performed for Others: contract R&D, testing and analysis.

Language(s) in Which Services are Provided: both english and french.

#### **MARK HOT INC.**

400 Place Trans Canada, Longueuil, Québec, J4G 1N9.

##### **Département de recherche et développement**

Admin. Contact: Jean Pierre Giguère, Vice-President, Engineering, Tel: (514) 670-4050.

Scientific Contact: Jean Courchesne, Director, Research and Development, Tel: (514) 670-4050.

Personnel: Total is 15 of which 7 are scientists and engineers.

Activities: This is a research laboratory for HVAC; analysis of static and dynamic structure; acoustics; vibration; air and water flow measurements; air conditioning; refrigeration.

Facilities: Two echo chambers (acoustics); two conduit rooms (for testing fans, coils, heat, water and air pumps, and so on); natural convection room that meets IBR standards; and temperature-controlled (6 C to 70 C) water loop.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: testing and analysis.

Language(s) in Which Services are Provided: both english and french.

Note: Descriptive text has been translated from French.

### **MARSHALL MACKLIN MONAGHAN LIMITED**

275 Duncan Mill Road, Don Mills, City of North York,  
Ontario, M3B 2Y1.

#### **Research Unit**

Admin. Contact: Mr. J.H. O'Donnely, V-President,  
Surveying and Mapping Division, Tel: (416) 449-2500.

Scientific Contact: Mr. W. Van Halm, Department  
Manager, Photogrammetric Services, Tel: (416) 449-2500.

Personnel: Total is 10 of which 4 are scientists and  
engineers.

Activities: ARC/INFO - a topologically structured  
geographic information system used at Marshall macklin  
Monaghan Limited is being enhanced in two distinct  
areas: the inter-active data entry and display modules  
are being optimized; linkages have been developed to  
other sources of digital data i.e. TOPOS and  
Intergraph's IGDS through SIF. TOPOS a survey data  
collection and coordinate management program  
developed at MMM has been released for sale on DEC  
and IBM PC equipment.

Facilities: None other than computers and plotters, VAX  
11-780; Microprocessors; Graphic Display Systems; Wild  
TA2 plotter; Calcomp 960 Plotter; various  
photogrammetric instruments.

Current or Potential Work Performed for: self or parent  
company, government, other clients.

Nature of Work Performed for Others: consultation,  
testing and analysis.

Language(s) in Which Services are Provided: english.

### **MARTEC LIMITED**

5670 Spring Garden Road, Halifax, N.S., B3J 1H6.

#### **Research Unit**

Contact: Dr. A.Y. McLean, President, Tel: (902) 425-5101.

Personnel: Total is 22 of which 18 are scientists and  
engineers.

Activities: STRUCTURAL ANALYSIS: Development and  
application of methods of stress & vibration analysis,  
using finite element technique, for marine structures;  
OCEAN ENGINEERING: Development and application  
of computer models for use in describing oceanographic  
processes such as the effect of environmental loads on  
structures or the movement of sediment; IMPACT  
ASSESSMENT: Development of techniques &  
procedures to measure & predict environmental effects  
on biological systems.

Facilities: Computing equipment; oceanographic  
measurement equipment; biological sampling equipment;  
computer models for marine application.

Current or Potential Work Performed for: self or parent  
company, government, other clients.

Nature of Work Performed for Others: contract R&D.

Language(s) in Which Services are Provided: english.

### **MASSEY-FERGUSON LIMITED**

595 Bay Street, Toronto, Ontario, M5G 2C3.

#### **Toronto Engineering Centre**

954 King St. W., Toronto, Ontario, M6K 1E5.

Admin. Contact: Philip Petz, Manager, General Services  
and Administration, Tel: (416) 593-3685.

Scientific Contact: Robert Doll, Director, Engineering,  
Tel: (416) 593-3253.

Personnel: Total is 150 of which 45 are scientists and  
engineers.

Activities: Design, prototype and testing of new products  
for the agricultural machinery industry. Development of  
advanced electronic control systems for the company's  
products.

Facilities: Computer aided design; computer aided  
engineering; advanced mobile test equipment.

Current or Potential Work Performed for: self or parent  
company, other clients.

Language(s) in Which Services are Provided: english.

### **MATERIAUX DE CONSTRUCTION CANADA LTEE**

10,500 Côte de Liesse, Ste 200, Lachine, Québec, H8T 3E3.

#### **Technology Centre**

244 St. Patrick Street, LaSalle, Québec, H8R 1R8.

Contact: S.A. McIntosh, Manager, Tel: (514) 364-0161.

Personnel: Total is 35 of which 17 are scientists and  
engineers.

Activities: Materials product and process R&D. Product  
applications technology Roofing - residential and  
industrial; insulation; vinyl siding; wood fibreboard;  
phenolic foams; asphaltic materials; vinyl compounds.

Current or Potential Work Performed for: self or parent  
company.

Language(s) in Which Services are Provided: both english  
and french.

### **MATERIEL INDUSTRIEL LTEE (LE)**

325, Grande Caroline, Rougemont, Québec, J0L 1M0.

#### **Research Unit**

Admin. Contact: M. Jean Sornin, Secrétaire-Trésorier,  
Tel: (514) 878-9676.

Scientific Contact: Maurice Beauchamp, Ingénieur-Jr,  
Tel: (514) 878-9676.

Personnel: Total is 3 of which 2 are scientists and  
engineers.

Activities: Gravity-fed gas burners (natural gas and  
propane); improvement of production methods for sheet  
metal products; development of an air-to-air heat  
exchanger for residential use.

Facilities: Combustion gas analyser; microcomputer;  
programmable controllers.

Current or Potential Work Performed for: self or parent  
company.

Language(s) in Which Services are Provided: both english  
and french.

Note: Descriptive text has been translated from French.

### **MATROX ELECTRONIC SYSTEMS LTD**

1055 St. Regis Blvd., Dorval, Quebec, H9P 2T4.

#### **Research Unit**

Admin. Contact: Lorne Trottier, President,  
Tel: (514) 685-2630.

Scientific Contact: Abel Ferreira, Manager, R&D,  
Tel: (514) 685-2630.

Personnel: Total is 70 of which 55 are scientists and  
engineers.

Activities: Industrial and commercial electronics equipment  
specializing in high resolution graphics displays,  
alphanumeric displays, micro-computer systems and  
video disc data retrieval systems. The product line  
ranges from board and module level product to  
terminals and intelligent work stations.

Facilities: VAX computer; logic analyzers; FCC radiation  
measurement equipments; in-circuit emulators.

Current or Potential Work Performed for: self or parent  
company.

Language(s) in Which Services are Provided: both english  
and french.

### **MAXIMA COMPUTER MANAGEMENT CONSULTANTS LTD**

Suite 810, 1600 Carling Avenue, Ottawa, Ontario, K1Z 7M4.

#### **Head Office**

Admin. Contact: Mr. J. Cody, Executive Vice President,  
Tel: (613) 725-9593.

Scientific Contact: Mr. R. Dubien, V/P Operations,  
Tel: (613) 725-9593.

Personnel: Total is 5 of which 5 are scientists and engineers. (Note: Computer professionals)

Activities: Maxima is an EDP services organization that has developed a library of fourth generation, model-driven methodologies called Maximizer TM. This library includes Protocycling TM which is an interactive software development technique using fourth generation language and relational database technologies.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.

Language(s) in Which Services are Provided: english.

#### **MCNEIL PHARMACEUTICAL (CANADA) LTD.**

600 Main Street West, Stouffville, Ontario, L4A 7X7.

##### **Research Unit**

Contact: W.J. Forgiel, Director of Scientific Affairs,  
Tel: (416) 640-6900.

Personnel: Total is 11 of which 6 are scientists and engineers.

Activities: Pharmaceutical Development; Clinical Research.

Facilities: Fluid Bed Dryer - 5 kg.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: english.

#### **MEC-FAB INC./SERVO-ROBOT INC.**

1401 Graham Bell, Boucherville, Québec, J4B 6A1.

##### **Paper Mills/Welding Robots**

Admin. Contact: R. Jim Hamel, President,  
Tel: (514) 655-7910.

Scientific Contact: Ken M. Smith, Manager of Eng.,  
Tel: (514) 655-7910.

Personnel: Total is 3 of which 3 are scientists and engineers.

Activities: Machinery and equipment for pulp and paper mills. Field of specialization: wet end equipment. Welding robots with infra-red sensing and searching capabilities.

Facilities: Screens; Headbox; slice lip; welding robots; stainless steel clad rolls; pulleys; agitators.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.

Language(s) in Which Services are Provided: both english and french.

##### **Servo-Robot Inc.**

Contact: Jean-Paul Baillot, President, Tel: (514) 655-7910.

Personnel: Total is 15 of which 12 are scientists and engineers.

Activities: Complete Turnkey on welding Robots.

Facilities: Robots (welding); Positionners; computers; complete lab.

Current or Potential Work Performed for: government, other clients.

Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.

Language(s) in Which Services are Provided: both english and french.

#### **MELVILLE SHIPPING LTD.**

Ste 1007, 350 Sparks Street, Ottawa, Ontario, K1R 7S8.

##### **Research Unit**

Admin. Contact: Mr. Tom Anderson, Controller,  
Tel: (613) 238-1840.

Scientific Contact: Mr. R.A. Dick, V-President,  
Tel: (613) 238-1840.

Personnel: Total is 22 of which 15 are scientists and engineers.

Activities: Sonar Technology Development - acoustic signal processing software/hardware; stereo side scan; correlation sonar; sub-bottom analysis system. Process Control - ingot quality control; nondestructive testing; monitoring systems and software.

Facilities: CE 7000, 8000 Computer Series; Monitoring Equipment; Sound Sources

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.

Language(s) in Which Services are Provided: english.

#### **MEMOTEC DATA INC.**

600 McCaffrey Street, St. Laurent, Québec, H4T 1N1.

##### **Research Unit**

Contact: Mr. G. Topalidis, Director, Research and Development, Tel: (514) 738-4781.

Personnel: Total is 24 of which 17 are scientists and engineers.

Activities: Data communication - development of communication processors with specific emphasis on X.25.

Facilities: Test equipment; Mini & Micro Computers;

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: english.

#### **MENASCO AEROSPACE LTD**

1400 South Service Road West, Oakville, Ontario, L6L 5Y7.

##### **Research Unit**

Admin. Contact: G. Conaboy, Engineering,  
Tel: (416) 825-1596.

Scientific Contact: Dr. S.R. Swanson, V.P., Technology,  
Tel: (416) 825-1568.

Personnel: Total is 386 of which 31 are scientists and engineers.

Activities: Development of new high performance actuation systems for flight control of aircraft, new methods of control especially by computer; application of CAD interactive design to the performance of flight controls and landing gears; development of advanced technology landing gear designs and use of high strength/weight ratio materials; study of advanced manufacturing including computer controlled processes and unattended machine centers for both landing gear and flight control products; on-board weight and balance systems research; crash attenuation development programs.

Facilities: CAD/CAM system; drop test equipment; shock test equipment; vibration test rigs; hydraulic systems development rigs; fatigue test stands.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.

Language(s) in Which Services are Provided: english.

#### **MERCK FROSST CANADA INC.**

16711 Trans-Canada Highway, Kirkland, Québec, H9H 3L1.

##### **Merck Frosst Canada Inc. Research Department**

Admin. Contact: Dr. C.H. Gleason, Director, Research Administration and Planning, Tel: (514) 695-7920.

Scientific Contact: Dr. J. Rokach, Executive Director of Research, Tel: (514) 695-7920.

Personnel: Total is 89 of which 64 are scientists and engineers.

Activities: The objective of the R&D is the discovery and development of novel drug therapy. The major current area of interest is the metabolites of arachidonic acid and their roles in various disease states, especially asthma, allergy, and inflammation. Principal fields of

specialization are Medicinal Chemistry, Pharmacology, Biochemistry, Pharmacy and Medicine.  
Facilities: Bruker 250 MHz Resolution FT Nuclear Magnetic Resonance (NMR) Instrument.  
Current or Potential Work Performed for: self or parent company.  
Language(s) in Which Services are Provided: both english and french.

#### **MESOTECH SYSTEMS LTD.**

2830 Huntingdon Place, Port Coquitlam, British Columbia, V3C 4T3.

##### **Research Unit**

Admin. Contact: C. Christensson, General Manager,  
Tel: (604) 464-8144.

Scientific Contact: R.G. Asplin (Bob), V.P. Engineering,  
Tel: (604) 464-8144.

Personnel: Total is 23 of which 5 are scientists and engineers.

Activities: Development of and improvements to underwater acoustic equipment. Specialization: transducer design, acoustic signal processing, colour image display of sonar data, design of acoustic transmitter and receivers.

Facilities: Microprocessor development system.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: english.

#### **METREX INSTRUMENTS LIMITED**

201 Wilkinson Road, Brampton, Ontario, L6T 4M2.

##### **Research Unit**

Admin. Contact: Mrs. E. Singer, Administrator,  
Tel: (416) 453-1110.

Scientific Contact: Dr. J. Motycka, President,  
Tel: (416) 453-1110.

Personnel: Total is 6 of which 4 are scientists and engineers.

Activities: Development of air pollution samplers, including optical monitors of aerosols in industrial environments and in an exhaust stack. Typical technology uses semiconductor lasers and microprocessor-controlled detection of light scattered by particulate matter; development of de-iceable drap anemometer using a force-balance principle the system monitors period speed and direction. The instrument has a set of ice sensors and de-icing heaters keeping the system ice free.

Facilities: Electronic instruments; computer.

Current or Potential Work Performed for: self or parent company, government.

Nature of Work Performed for Others: consultation.

Language(s) in Which Services are Provided: english.

#### **MICRO CONTROLE INC.**

358, Jackson, Québec, Québec, G1N 4C5.

##### **Recherche & développement**

Admin. Contact: Gilles Hébert, Contrôleur,  
Tel: (418) 681-0216.

Scientific Contact: Serge Mathieu, Directeur, Recherche et développement, Tel: (418) 681-0216.

Personnel: Total is 4 of which 2 are scientists and engineers.

Activities: Programmable electronic timeclocks; energy management systems; demand control; dual-fuel systems; low-voltage lighting control systems.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: both english and french.

Note: Descriptive text has been translated from French.

#### **MICROTEL LIMITED**

7018 Lougheed Hwy, Burnaby, British Columbia, V5A 1W3.

##### **Microtel Pacific Research Limited**

8999 Nelson Way, Burnaby, British Columbia, V5A 4B5.

Admin. Contact: Mr. K.W. Coleman, Controller,  
Tel: (604) 294-1471.

Scientific Contact: J.S. Myles, Vice-President, Product Development, Tel: (604) 294-1471.

Personnel: Total is 315 of which 156 are scientists and engineers.

Activities: Telecommunications R and D specializing in - Telephone Switching, Terrestrial Radio, Satellite Communications, Digital Radio, Frequency Division Multiplex, VLSI Circuit Development and Systems Development.

Facilities: VLSI, special purpose test equipment, and computer facility.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D.

Language(s) in Which Services are Provided: english.

##### **Microtel Learning Services**

1795 Willingdon Ave, Burnaby, British Columbia, V5C 5J2.

Admin. Contact: Robert A.M. Ascroft, Support Services Manager, Education Products and Services,  
Tel: (604) 293-3689.

Scientific Contact: Arch McFarlane, Production Manager, Education Products and Services, Tel: (604) 293-3666.

Personnel: Total is 16 of which 7 are scientists and engineers.

Activities: Computer-based training and training technology.

Facilities: Computers; digitizers.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: english.

##### **Viscount Industries Ltd**

105 East 69th Ave, Vancouver, B.C., V5X 2W9.

Admin. Contact: Mr. A.J. Gerrebos, General Manager,  
Tel: (604) 327-9446.

Scientific Contact: Mr. W. McNab, Engineering Manager,  
Tel: (604) 327-9446.

Personnel: Total is 6 of which 4 are scientists and engineers.

Activities: Research and development of telephone industry test equipment.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: english.

##### **Microtel Pacific Research Limited**

8999 Nelson Bay, Burnaby, British Columbia, V6A 4B5.

Admin. Contact: A.N. Rosser, Director, Human Resources & Administration, Tel: (604) 294-1471.

Scientific Contact: John Myles, Vice President, Product Development, Tel: (604) 294-1471.

Personnel: Total is 307 of which 275 are scientists and engineers.

Activities: MPR is dedicated to the design and development of analog and digital telecommunications equipment. Specific fields of expertise include: software development, VLSI design, linear and microwave signal processing, telecommunications systems planning.

Facilities: VLSI design facility (Pacific Micro-electronics Centre); automated design tools; large computer capacity.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.

Language(s) in Which Services are Provided: english.

## **MICROTRONIX SYSTEMS LTD**

120 Bessemer Road, London, Ontario, N6E 1R2.

### **Research Unit**

Contact: Eric E. Auzins, President, Tel: (519) 681-3430.

Personnel: Total is 6 of which 3 are scientists and engineers.

Activities: Specializes in developing testing equipment for the telephone industry. Both hardware and software R&D is done.

Facilities: Oscilloscopes, meters, etc. for hardware development; microcomputer development system.

Current or Potential Work Performed for: self or parent company, other clients.

Nature of Work Performed for Others: contract R&D, consultation.

Language(s) in Which Services are Provided: english.

## **MILES AIR PRODUCTS LTD**

411 Birchmount Road, Scarborough, Ontario, M1K 1N3.

### **Research Unit**

Admin. Contact: J.A. Miles, President, Tel: (416) 690-4404.

Scientific Contact: E.L. Greenwood, , Tel: (416) 690-4404.

Personnel: Total is 1 of which 1 is a scientist or engineer.

Activities: We are a small company engaged in the manufacture of boom microphone headsets. Our R&D is of a state of the art nature for such a product, often involving microphones. Presently we are studying the utilization of solar cells for a new application, as an alternative to using batteries.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: english.

## **MILLER COMMUNICATIONS SYSTEMS LTD**

300 Legget Drive, Kanata, Ontario, K2K 1Y5.

### **Advanced Systems**

Admin. Contact: Rami Acouri, Manager of Operations, Tel: (613) 592-3020.

Scientific Contact: Brian Mazur, Manager of Advanced Systems, Tel: (613) 592-3020.

Personnel: Total is 10 of which 10 are scientists and engineers.

Activities: The Advanced Systems Division performs system design studies, analysis and simulations of novel and state-of-the-art applications, principally in the fields of communications, electronic warfare, navigation and radar. Custom software and hardware is also developed to the level of full-scale prototype or small quantity production to prove concepts, demonstrate performance, and establish products. This latter activity is often performed in collaboration with other divisions to make full use of experienced Company system development talent. Major fields of specialization are: fixed satellite system design (particularly TDMA and broadcast applications); mobile satellite systems design (e.g. MSAT, IMMARSAT, etc.); satellite navigation and positioning systems (e.g. GPS, NAVSAT, SARSAT, etc.); channel modelling and propagation effects analysis; digital modulation techniques and forward error correction coding; spectral analysis and interference effects evaluation; adaptive receivers and equalizers (particularly for HF communications); spread spectrum systems; emitter location and identification systems; spectrum analyzing receivers.

Facilities: Oscilloscopes and signal generators; computers; spectrum analysis equipment; noise meters.

Current or Potential Work Performed for: government, other clients.

Nature of Work Performed for Others: contract R&D, consultation.

Language(s) in Which Services are Provided: english.

### **Telemetry Group**

Admin. Contact: Rami Acouri, Manager of Operations, Tel: (613) 592-3020.

Scientific Contact: Terry Rubino, Telemetry Manager, Tel: (613) 592-3020.

Personnel: Total is 10 of which 10 are scientists and engineers.

Activities: Processing and transmission of radar video information from an aircraft to a ship or ground station at VHF and S Band; Digitization, processing and storage of high speed data (e.g. radar video) (data acquisition); Modem development (2.4 Kbps to 2 Mbps); Voice scramblers; Aircraft YAW and drift angle compensation of SLAR Imagery.

Facilities: Oscilloscopes and signal generators; computers; spectrum analysis equipment; noise meters.

Current or Potential Work Performed for: government, other clients.

Nature of Work Performed for Others: contract R&D, consultation.

Language(s) in Which Services are Provided: english.

### **Monitoring Systems Division**

Admin. Contact: Rami Acouri, Manager of Operations, Tel: (613) 592-3020.

Scientific Contact: John Bodie, Manager, Monitoring Systems, Tel: (613) 592-3020.

Personnel: Total is 10 of which 10 are scientists and engineers.

Activities: Development of systems for radio spectrum occupancy monitoring; development of systems for satellite carrier monitoring; development of computer-controlled instrumentation.

Facilities: Oscilloscopes and signal generators; computers; spectrum analysis equipment; noise meters.

Current or Potential Work Performed for: government, other clients.

Nature of Work Performed for Others: contract R&D, consultation.

Language(s) in Which Services are Provided: english.

## **MILLER TECHNOLOGY INC**

1839 Seymour Street, Site 9, Comp 11, RR#3, North Bay, Ontario, P1B 8G4.

### **Research Unit**

Contact: Ron Miller, President, Tel: (705) 476-4500.

Personnel: Total is 8 of which 2 are scientists and engineers.

Activities: Mobile mining, construction, forestry equipment; hydraulic design and testing; forensic engineering.

Facilities: Thermographic analysis; ultrasonic cleaning; materials testing, microscopic; hydrocarbon identifications; non-destructive testing; hardness testing.

Current or Potential Work Performed for: self or parent company, other clients.

Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.

Language(s) in Which Services are Provided: both english and french.

## **MINAS SEED CO-OPERATIVE LTD**

P.O. Box 130, Canning, Nova Scotia, B0P 1H0.

### **Research Unit**

Admin. Contact: Miss Anne Stevens, Supervisor Quality Control, Tel: (902) 582-3346.

Scientific Contact: J.E. Peill, President, Tel: (902) 582-3346.

Personnel: Total is 4 of which 2 are scientists and engineers.

Activities: (I.C.M.) Integrated Crop Management; cereals, corn, soya.  
 Facilities: 12 m Tramline system.  
 Current or Potential Work Performed for: self or parent company, government, other clients.  
 Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.  
 Language(s) in Which Services are Provided: english.

#### **MINE WASTE RECLAMATION LTD**

565 Massey Road, Guelph, Ontario, N1H 6R1.

##### **Research Unit**

Contact: Dr. E.M. Watkin, President, Tel: (519) 823-2060.  
 Personnel: Total is 4 of which 1 is a scientist or engineer.  
 Activities: Reclamation through vegetation of mining and industrial wastes; utilization of wastes as amendments for contaminated soils. Development of dust suppressants for control of fugitive dust on waste disposal areas, railcars and stockpiles. Development of chemicals for acid tailings seepage control.  
 Facilities: Large environmentally controlled plant growth facility.  
 Current or Potential Work Performed for: self or parent company, government, other clients.  
 Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.  
 Language(s) in Which Services are Provided: english.

#### **MINMET SCIENTIFIC LTD**

672 Mount Pleasant Road, Toronto, Ontario, M4S 2N3.

##### **Research Unit**

Contact: Claudia Gasparrini, President,  
 Tel: (416) 481-1416.  
 Personnel: Total is 1 of which 1 is a scientist or engineer.  
 Activities: The type of R&D involves mostly the use of mineralogy for the location of problems which develop during the process of extraction. Applied mineralogy is also used in mineral exploration and in feasibility studies of ores.  
 Facilities: Leitz ore microscope; scanning electron microscope.  
 Current or Potential Work Performed for: other clients.  
 Nature of Work Performed for Others: contract R&D, consultation.  
 Language(s) in Which Services are Provided: english.

#### **MITELE CORPORATION, SEMICONDUCTOR DIVISION**

360 Leggett Drive, P.O. Box 13320, Kanata, Ontario, K2K 1X5.

##### **Wafer Fabrication Process R&D**

19 boulevard L'Aéroport, Bromont, Québec, J0E 1L0.  
 Contact: Jean Deslauriers, Director, R&D,  
 Tel: (514) 534-2321.  
 Personnel: Total is 30 of which 10 are scientists and engineers.  
 Activities: R&D into novel methods of making CMOS semiconductor devices, especially devices with minimum feature sizes of two micrometers and smaller. This involves use of advanced photolithographic equipment and advanced reactive ion etch techniques. Also, new photoresist techniques are explored and methods of planarizing microtopographies are sought.  
 Facilities: Reactive ion etch equipment for aluminum etching.  
 Current or Potential Work Performed for: self or parent company.  
 Language(s) in Which Services are Provided: both english and french.

#### **Product Development**

360 Leggett Drive, P.O. Box 13320, Kanata, Ontario, K2K 1X5.

Contact: M.S. Foster, Assistant Vice-President,  
 Tel: (613) 592-2122.

Personnel: Total is 32 of which 20 are scientists and engineers.

Activities: Integrated Circuit Design. Computer Aided Design and Test, Thick Film Hybrid Design. IC Design of custom and semi-custom CMOS circuits in 5, 4, and 3 micron double polysilicon technologies. The development and support of CAD software and hardware for the simulation, layout, and test program development of IC's.

Facilities: CALMA GDSII Color Graphics Systems; DEC VAX 780 computers; ZYCAD logic simulator; Daisy workstations.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: english.

#### **MODULES SECURITAIRES C.M. LTÉE**

19-400 Cruickshank, Baie D'urfé, Québec, H9X 3P1.

##### **Research Unit**

Admin. Contact: Gérald Spénard, C.A., Vice-président,  
 Finance, Tel: (514) 457-6650.

Scientific Contact: Cédo Draca, Ing., Président,  
 Tel: (514) 457-6650.

Personnel: Total is 6 of which 2 are scientists and engineers.

Activities: Performance tests to determine the nature and resistance of self-supporting security panels composed of a lightweight steel structure covered with concrete. Materials used primarily for security purposes such as detention centres, court rooms, automated centres.

Facilities: Mechanized hammer hooked up to graphic recording equipment.

Current or Potential Work Performed for: self or parent company, government.

Nature of Work Performed for Others: consultation, testing and analysis.

Language(s) in Which Services are Provided: both english and french.

Note: Descriptive text has been translated from French.

#### **Fenêtres et Vitraux C.M. Ltée**

Admin. Contact: Gérald Spénard, C.A., Vice-président,  
 Finance, Tel: (514) 457-6650.

Scientific Contact: Cédo Draca, Ing., Président,  
 Tel: (514) 457-6650.

Personnel: Total is 6 of which 3 are scientists and engineers.

Activities: Performance tests on various compositions of steel and other compounds to determine impact, deflection and breaking resistance. The finished products must meet the requirements of government agencies in the field of detention and security.

Facilities: Motorized saw; graphic recording; deflection equipment.

Current or Potential Work Performed for: self or parent company, government.

Nature of Work Performed for Others: consultation, testing and analysis.

Language(s) in Which Services are Provided: both english and french.

Note: Descriptive text has been translated from French.

#### **MOHAWK DATA SCIENCES-CANADA LIMITED**

235 Hood Road, Markham, Ontario, L3R 4N5.

**MDS Canada Systems R&D Group**

Contact: Peter Brugger, Director, Systems Resources,  
Tel: (416) 475-6060.

Personnel: Total is 9 of which 8 are scientists and engineers.

Activities: Design and development of software for computer communications, e.g. local area networking, SNA and X.25 software.

Facilities: Line monitors; in-circuit correlators; protocol simulators.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation.

Language(s) in Which Services are Provided: english.

**MOLI ENERGY LIMITED**

3958 Myrtle Street, Burnaby, British Columbia, V5C 4G2.

**Research Unit**

Contact: Dr. J.A. Stiles, SNR VP R&D,  
Tel: (604) 437-6927.

Personnel: Total is 35 of which 12 are scientists and engineers.

Activities: Lithium battery R&D - materials research, battery development, battery electrochemistry, applications research for rechargeable lithium batteries.

Facilities: Inert atmosphere glove boxes; scanning electron microscope; FT infrared spectrometer; gas chromatograph; atomic absorption spectrophotometer; microcalorimeter; chromatograph coupled with a mass spectrometer; special test equipment for batteries.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D.

Language(s) in Which Services are Provided: english.

**MOLSON BREWERIES OF CANADA LTD**

2486 Dunwin Drive, Mississauga, Ontario, L5L 1J9.

**Technical Centre**

Admin. Contact: Mr. David W. Hysert, V.P. of Research & Quality Control, Tel: (416) 828-1786.

Scientific Contact: Mr. Joris E.A. Van Gheluwe, Manager, Technical Development, Tel: (416) 828-1786.

Personnel: Total is 25 of which 19 are scientists and engineers.

Activities: Our R&D effort can be categorized broadly as brewing science; Our primary objectives are: Improvement of physical and flavour stability of beer; Process and productivity development; product development; raw materials investigations including barley, malt, hops; Development of analytical and microbiological methods for Quality Control; development of fermentation technology; production-related problem solving.

Facilities: Chemical/analytical instrumentation including uv, ir, nmr, gc, hplc, tlc; pilot brewery (26L); two New Brunswick fermenters; equipment for genetic engineering; yeast culture collection; sensory evaluation facilities.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: english.

**MONENCO CONSULTANTS LTD.**

801 6 Avenue South West, Monenco Place, Calgary, Alberta, T2W 3W3.

**MONENCO ANALYTICAL LABORATORIES**

2023 2nd Avenue South East, Calgary, Alberta, T2E 6K1.

Admin. Contact: Dr. J.R. Dean, General Manager,  
Tel: (403) 273-2525.

Scientific Contact: Dr. N. Chiu, Laboratory Manager,  
Tel: (403) 273-2525.

Personnel: Total is 13 of which 7 are scientists and engineers.

Activities: Radiochemistry - R&D of Analytical Methodology; of natural radiochemical process (e.g. sedimentation); Development of radioactivity removal processes. Inductively coupled plasma - Emission Spectrometry; applications development (e.g. direct analysis of coal). Occupational Hygiene - Analytical Methods Development.

Facilities: JY-38-ICP-ES; Six-Alpha Spectrometers and Accessories; ION Chromatograph; Harshaw - Alpha/Beta/Gamma Counting System.

Current or Potential Work Performed for: self or parent company, government.

Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.

Language(s) in Which Services are Provided: english.

**MONITEQ LTD.**

630 Rivermede Road, Concord, Ontario, L4K 2H7.

**Systems Engineering Division**

Contact: Dr. S.C. Jain, Vice-President, R&D,  
Tel: (416) 669-5334.

Personnel: Total is 30 of which 15 are scientists and engineers.

Activities: Contract development of hardware and software.

Facilities: Optical table; environmental chamber; vacuum system.

Current or Potential Work Performed for: government, other clients.

Nature of Work Performed for Others: contract R&D, consultation.

Language(s) in Which Services are Provided: english.

**MONO RESEARCH LABORATORIES LTD.**

P.O. Box 566, 300 Highway 7 West, Brampton, Ontario, L6V 2L6.

**Research Unit**

Contact: Nigel H.K. Armstrong, President,  
Tel: (416) 454-4000.

Personnel: Total is 3 of which 2 are scientists and engineers.

Activities: Particle characterization: emphasis is on the detection, sizing and characterization of particulates in air, liquids or in powder form covering the size range 5 nanometers thru 9000 micrometers. Complete systems, including special sample handling systems, have been designed and manufactured utilizing basic particle detection equipment manufactured by Pacific Scientific, California. In addition, application development is undertaken on measurement of Zeta Potential utilizing proprietary equipment manufactured in the United Kingdom. Special applications have been developed or are in the process of development for many industries including hydraulics, chemical, water treatment and oil industries.

Facilities: Complete electronic service facilities; small mechanical workshop.

Current or Potential Work Performed for: government, other clients.

Nature of Work Performed for Others: contract R&D, testing and analysis.

Language(s) in Which Services are Provided: english.

**MONSERCO LIMITED**

6620 Kitimat Road, Mississauga, Ontario, L5N 2B8.

#### Research Unit

Admin. Contact: John A. Spragge, Lab Manager,

Tel: (416) 821-1033.

Scientific Contact: George Gordon, Vice-President,

Tel: (416) 821-1033.

Personnel: Total is 14 of which 10 are scientists and engineers.

Activities: Nuclear radiation safety studies; environmental dispersion modeling techniques; occupational hygiene studies; structural analysis; thermo dynamics; seismic and vibration analysis.

Facilities: Sensitive radiation detection equipment; VAX computer with special software; seismic "shaker" table; simulators; high impact drop test rig; laboratory.

Current or Potential Work Performed for: government, other clients.

Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.

Language(s) in Which Services are Provided: english.

#### MORGAN SCHAFFER CORPORATION

5110 De Courtrai Avenue, Montréal, Québec, H3W 1A7.

#### Research Unit

Admin. Contact: Robert Schaffer, Ph.D., Vice-President,

Tel: (514) 739-1967.

Scientific Contact: James E. Morgan, Ph.D., President,

Tel: (514) 739-1967.

Personnel: Total is 3 of which 2 are scientists and engineers.

Activities: Analysis of dissolved gases in transformer oil - development of instrumentation.

Facilities: Mass spectrometer; gas chromatographs; water analyzer; high vacuum equipment.

Current or Potential Work Performed for: self or parent company.

Nature of Work Performed for Others: testing and analysis.

Language(s) in Which Services are Provided: both english and french.

#### MORRIS INDUSTRIES LTD

1527 Columbia Street, North Vancouver, British Columbia, V7J 1A3.

#### Research Unit

Contact: David Morris, President, Tel: (604) 986-2189.

Personnel: Total is 6 of which 2 are scientists and engineers.

Activities: Oil pollution control equipment; oil skimmers and booms.

Current or Potential Work Performed for: self or parent company, government.

Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.

Language(s) in Which Services are Provided: english.

#### MORRIS MAGNETICS INCORPORATED

R.R. 2, Lucan, Ontario, N0M 2J0.

#### Research Unit

Admin. Contact: W.A. Morris, Proprietor,

Tel: (519) 227-1106.

Scientific Contact: S.J. Balch, Research Scientist,

Tel: (519) 227-4142.

Personnel: Total is 4 of which 3 are scientists and engineers.

Activities: Physical properties of materials including: magnetic properties, susceptibility, remanence, hysteresis, paleomagnetism, archeomagnetism; thermal conductivity, porosity, permeability, density; optical petrology, electron microscopy; electrical conductivity. Development of borehole logging techniques for mineral industry and tar sand exploration, regional gravity and magnetic surveys.

Facilities: Low temperature magnetometer; controlled magnetic field space; high sensitivity susceptibility bridge. Borehole logging tools for susceptibility and self potential.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.

Language(s) in Which Services are Provided: english.

#### MORRIS ROD-WEEDER CO LTD

85 York Road, Yorkton, Saskatchewan, S3N 2X2.

#### Morris Research & Development

605 York Road West, Yorkton, Saskatchewan, S3N 2X2.

Admin. Contact: Murray Just, Director, R&D,

Tel: (306) 783-8585.

Scientific Contact: Mr. Glen Hantke, R&D Product

Supervisor, Tel: (306) 783-8585.

Personnel: Total is 26 of which 6 are scientists and engineers.

Activities: Our R&D is in the Agriculture Field dealing with: tillage, cultivation of the soil and machines to do this; farm seeding of fine grains, coarse grains, and row crop seeds proper placement, packing and machines to accomplish this; fertilizer placement, amounts and machines to do this; hay handling equipment.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: english.

#### MORRISON HERSHFIELD LIMITED

4 Lansing Square, North York, Ontario, M2J 1T1.

#### Morrison Hershfield Limited Research and Development

1815 Meyerside Drive, Unit 4, Mississauga, Ontario, L5T 1G3.

Contact: Allan T. Quaile, Manager, Research and

Development, Tel: (416) 499-3110.

Personnel: Total is 4 of which 2 are scientists and engineers.

Activities: R&D activities are directed toward structural engineering technology. The laboratory is equipped for testing of: wood-based structural components; wood products in structural sizes; engineered structural assemblies.

Facilities: Test frame for trusses, beams, columns; pneumatic loading equipment; moisture content measuring device; Specific gravity equipment.

Current or Potential Work Performed for: self or parent company, government.

Nature of Work Performed for Others: contract R&D.

Language(s) in Which Services are Provided: english.

#### Research Unit

650 Woodlawn Road West, Guelph, Ontario, N1K 1B8.

Admin. Contact: Colin Williams, General Manager,

Tel: (519) 823-1311.

Scientific Contact: Peter Irwin, Dir. of Technical Services,

Tel: (519) 823-1311.

Personnel: Total is 45 of which 15 are scientists and engineers.

Activities: Drifting Snow Studies - scale model simulations of drifting snow; Wind Loading Studies - development of techniques for cladding and structural loads measurement using scale models in a boundary layer wind tunnel; Pollution Studies - fugitive emissions, gas dispersion and internal ventilation studies using scale models; Solar Studies - sun/shade and solar reflectance from mirror curtainwall studies using a heliodon.

Facilities: Boundary Layer Wind Tunnel; Open Channel Waterflume; Heliodon.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.

Language(s) in Which Services are Provided: english.

#### **MORTON & PARTNERS LIMITED**

215 Carlingview Drive, Rexdale, Ontario, M9W 5X8.

##### **Research Unit**

Admin. Contact: J. Coates, Administrator,  
Tel: (416) 675-1440.

Scientific Contact: J.D. Morton, Senior Partner/Principal,  
Tel: (416) 675-1440.

Personnel: Total is 2 of which 2 are scientists and engineers.

Activities: Tunnelling & W/G Opening Design - Application of TBMO Rapid Tunnelling Methods; Fibre-reinforced concrete for W/G opening support & tunnel linings.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.

Language(s) in Which Services are Provided: english.

#### **MOSAID INC.**

P.O. Box 13579, Kanata, Ontario, K2K 1X6.

##### **Research Unit**

Admin. Contact: C. Baburek, Group Comptroller,  
Tel: (613) 836-3134.

Scientific Contact: B. Woodley, Engineering Manager,  
Tel: (613) 836-3134.

Personnel: Total is 35 of which 16 are scientists and engineers.

Activities: Analysis of memory I.C.'s; design of memory I.C.'s; development of MOSFET modeling techniques and software; development of techniques and software for I.C. computer simulation; development of techniques and systems for a memory I.C. test device.

Facilities: Microscope and photography equipment; DEC - VAX; DEC - PDP/11; miscellaneous P.C.s and peripherals; miscellaneous test equipment.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.

Language(s) in Which Services are Provided: english.

#### **MOTOROLA INFORMATION SYSTEMS**

9445 Airport Rd, Brampton, Ontario, L6S 4J3.

##### **Research Unit**

Admin. Contact: L.R. Wood, Eng. Admin.,  
Tel: (416) 793-5700.

Scientific Contact: G.R. Lang, Vice-President, R&D,  
Tel: (416) 793-5700.

Personnel: Total is 92 of which 52 are scientists and engineers.

Activities: Design of electronic data communications; hardware software; microprocessor software firmware; signal processing/array processors hardware, software for acoustic, satellite, SAR, IMAGE applications.

Facilities: DEC VAX782 Dev. System; Applicon CAD System; Xerox Star Graphics; Screened Room; T-ASP-II Array/Processor; 2-HP 64000 Analyzers; RF Power Spectrum Analyzer.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D.

Language(s) in Which Services are Provided: english.

#### **MPB TECHNOLOGIES INC.**

1725 North Service Road, Trans-Canada Highway, Dorval, Québec, H9P 1J1.

##### **Research Unit**

Admin. Contact: C.W. Rose, Chief Accountant,  
Tel: (514) 683-1490.

Scientific Contact: Dr. M.P. Bachynski, President,  
Tel: (514) 683-1490.

Personnel: Total is 48 of which 38 are scientists and engineers.

Activities: Federally incorporated in late 1976, MPB Technologies Inc. specializes in high technology products, contract research and development and consulting services. The company is fully facilitated to conduct experimental, theoretical and developmental work and manufacturing in a number of fields. The activities and facilities of the divisions of MPB Technologies Inc. broadly encompass the following. Lasers: Complete systems for communications, scientific measurements, optical coherent radar and non-destructive testing; far-infra red, infra red and visible lasers; stabilization, frequency tuning and optical fibre devices; bakeout and filling facilities for gas lasers, hydrogen oven for ceramic envelope fabrication and sealing, chemical room for chemical lasers. Electromagnetics: Airborne and ground based scatterometers, millimetre wave radiometers, millimetre wave radars and special instrumentation (5 - 140 GHz); radar detection, scattering target discrimination and simulation; space shuttle experiments, software and ground test equipment; antenna design, fabrication and measurement; radar cross-section and doppler measurements. Fusion: Data acquisition and control systems based on PDP 11/44 and VAX870 computers; engineering design related to eddy current losses, induced forces, plasma control and vacuum systems; diagnostic instrumentation including magnetic loops, Rogowski coils, microwave interferometers, Thomson scatter receivers and impurity injection systems; in-house tokama facility; theoretical studies of heat transport in laser fusion, impurity kinetics, electron cyclotron heating and time evolution of plasma current and temperature. Electronics: Design, development and manufacture of microprocessor based systems (both hardware and software) with superior quality graphics and special features for television broadcast and business applications, telex answering service operator communications consoles; even recorders and playback systems; custom digital electronics systems. The personnel of MPB Technologies Inc. consists of a unique blend of physicists and engineers and technical staff backed by an efficient project management capability. Many of the key staff members are widely recognized for their contributions to various disciplines. There are 20 on staff with the Ph.D. degree.

Facilities: Computers - PDP11/plus, MINC, IBM PC microprocessor development systems (Emulogic, Intel (3)); anechoic chamber (electromagnetic); microwave measurement systems at 10, 24, 35, 70, 140 GHz; hydrogen furnace; laser bake-out and filling facilities.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation.

Language(s) in Which Services are Provided: both english and french.

#### **MULCO INC.**

2835 Grande Allée, St-Hubert, Québec, J4T 3K3.

##### **Research Unit**

2433 Sir Wilfrid Laurier, St-Hubert, Québec, J4T 2R2.

Admin. Contact: Mario Taboika, Président et Directeur général, Tel: (514) 465-5470.

Scientific Contact: Marc-André Chabot, Directeur de la recherche du développement, Tel: (514) 465-5470.  
 Personnel: Total is 8 of which 4 are scientists and engineers.  
 Activities: R&D fields; sealants and caulking compounds; body fillers; weather-proofing materials; construction adhesives.  
 Facilities: Weather-O-Meter; extension machine (caulking compounds); tensile machine (caulking compounds and adhesives).  
 Current or Potential Work Performed for: self or parent company.  
 Nature of Work Performed for Others: consultation, testing and analysis.  
 Language(s) in Which Services are Provided: both english and french.  
 Note: Descriptive text has been translated from French.

#### **MULTI-AMP CANADA LIMITED**

445 Finchdene Square, Scarborough, Ontario, M1X 1B7.

##### **Engineering Department**

Contact: O.W. Iwanusiw, Chief Engineer,  
 Tel: (416) 298-6770.  
 Personnel: Total is 8 of which 2 are scientists and engineers.  
 Activities: Industrial research for new product development covering electrical measurements of voltage, current, power, capacitance, dissipation factor, energy and resistance.  
 Current or Potential Work Performed for: self or parent company.  
 Language(s) in Which Services are Provided: english.

#### **MULTILIN INC**

7 Heritage Road, Markham, Ontario, L3P 1M3.

##### **R&D**

Contact: N. Woodruff, General Manager,  
 Tel: (416) 294-9465.  
 Personnel: Total is 5 of which 5 are scientists and engineers.  
 Activities: Electronic Industrial Controls; Temperature Measurement; Mining Safety Instruments and Controls; Breaker/Feeder Protection.  
 Current or Potential Work Performed for: self or parent company.  
 Nature of Work Performed for Others: contract R&D.  
 Language(s) in Which Services are Provided: english.

#### **MURATA ERIE NORTH AMERICA LTD.**

5 Fraser Avenue, Trenton, Ontario, K8V 5S1.

##### **Research Unit**

Admin. Contact: Robin Wilson, EMI Appl. Manager,  
 Tel: (613) 392-2581.  
 Scientific Contact: Mike Blamire, Design Eng. Manager,  
 Tel: (613) 392-2581.  
 Personnel: Total is 24 of which 10 are scientists and engineers.  
 Activities: Development of EMI filters for electronic equipment. Development of high voltage and special purpose low voltage power supplies. Development of special process equipment.  
 Current or Potential Work Performed for: self or parent company.  
 Nature of Work Performed for Others: consultation, testing and analysis.  
 Language(s) in Which Services are Provided: english.

#### **MURPHY OIL COMPANY LTD**

Ste 1700, 800-6th Ave. S.W., Calgary, Alberta, T2P 3Y3.

#### **Murphy Research and Development Division**

1700, 800 Sixth Avenue S.W., Calgary, Alberta, T2P 3Y3.

Contact: Mr. R.W. (Bill) Thornton, Manager R&D,  
 Tel: (403) 294-8068.

Personnel: Total is 14 of which 2 are scientists and engineers.

Activities: The company does research into developing techniques for increasing production from heavy oil and tar sands - this involves research into, and field pilot testing of thermal recovery techniques such as fireflood and steamflood; the company does research design and development of heavy oil equipment such a downhole pumping, emulsion separation and production measuring equipment.

Facilities: Eyehill 25 well in situ combustion pilot; Lindbergh 7 well steamflood pilot.

Current or Potential Work Performed for: self or parent company.

Nature of Work Performed for Others: testing and analysis.

Language(s) in Which Services are Provided: english.

#### **MUSTANG INDUSTRIES INC**

3810 Jacombs Road, Richmond, British Columbia, V6V 1Y6.

##### **Experimental Workshop**

Contact: Robert J. Askew, Manager, Industrial Production and Technical Development, Tel: (604) 270-8631.  
 Personnel: Total is 4 of which 2 are scientists and engineers.  
 Activities: Research in collaboration with other organizations into the nature of life threatening situations in marine and related environments. Development of personal protective clothing, equipment and systems to enhance survival in marine environments.

Facilities: Buoyancy test equipment.

Language(s) in Which Services are Provided: english.

#### **MUTH AIR PAC INC.**

23985 Lougheed Highway, Albion, British Columbia, V0M 1B0.

##### **Research Unit**

23985 Lougheed Hwy, Albion, B.C., V0M 1B0.  
 Admin. Contact: Fred H. Muth, President,  
 Tel: (604) 467-5571.  
 Scientific Contact: Gordon H. Muth, Research Technologist, Tel: (604) 467-5571.  
 Personnel: Total is 4 of which 1 is a scientist or engineer.  
 Activities: Automation in the wood products industry. Specialization in cutting, sorting and packaging systems for shingle, shake and saw mills.  
 Facilities: Programmable controller.  
 Current or Potential Work Performed for: other clients.  
 Nature of Work Performed for Others: contract R&D, consultation.  
 Language(s) in Which Services are Provided: both english and french.

#### **MW CANADA LTD**

291 Elgin Street North, P.O. Box 368, Cambridge, Ontario, N1R 5V5.

##### **Research Unit**

Admin. Contact: L.M. Spitzer, Controller,  
 Tel: (519) 621-5460.  
 Scientific Contact: U. Negro, Head, Design Staff,  
 Tel: (519) 621-5460.  
 Personnel: Total is 5 of which 4 are scientists and engineers.  
 Activities: Fabric developments for various decorative, industrial, furniture and allied fields.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: french.

#### **NANOTEC MANUFACTURING CORPORATION**

P.O. Box 610, Almonte, Ontario, K0A 1A0.

##### **Nanotec Sciences Corp.**

One Heritage Square, Almonte, Ontario, K0A 1A0.

Admin. Contact: Margie Cox, Admin. Co-ord.,

Tel: (613) 256-1483.

Scientific Contact: John Heckman, V.P. Tech.,

Tel: (613) 256-1483.

Personnel: Total is 20 of which 10 are scientists and engineers.

Activities: Commercial telecommunications systems - data.

Facilities: Micro computer system emulator running on VAX 11/750.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: english.

#### **NATIONAL SEA PRODUCTS LIMITED**

PO Box 2130, Duke Tower, Scotia Square, Halifax, Nova Scotia., B3J 3B7.

##### **Fisheries Resource Devel. Ltd - a National Sea Products Ltd's subsidiary R & D company**

Suite 317, 2021 Brunswick Street, Halifax, Nova Scotia, B3K 2Y5.

Admin. Contact: Mrs. Laura Boyd-Brown, Administrative

Assistant, Tel: (902) 420-1761.

Scientific Contact: Dr. John F. Maloney, President & CEO,

Tel: (902) 420-1761.

Personnel: Total is 13 of which 12 are scientists and engineers.

Activities: Product development, process development, marine sciences. Fields of specialization - marine engineering, fisheries processing, food science and technology, industrial engineering.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: english.

#### **NAUTICAL ELECTRONIC LAB LTD**

R.R. 1, Tantallon, Halifax County, Nova Scotia, B0J 3J0.

##### **Engineering Department**

Contact: John R. Pinks, Chief Engineer,

Tel: (902) 823-2233.

Personnel: Total is 22 of which 7 are scientists and engineers.

Activities: Research and development in the field of high power, totally solid state radio transmitters; frequency bands: LF, MF, HF; power levels (up to 50kw); use: navigation and communication; current programs focused on very efficient class 'D' transmitters for AM transmission.

Facilities: Environmental test chambers; high power dummy loads (150kw).

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation.

Language(s) in Which Services are Provided: english.

#### **NAWITKA RENEWABLE RESOURCE CONSULTANTS LIMITED**

836-840 Cormorant Street, Victoria, British Columbia, V8W 1R1.

##### **Project Basis**

Admin. Contact: George S. Nagle, President,

Tel: (604) 384-5133.

Scientific Contact: Stephen M. Smith, Senior Consultant, Tel: (604) 384-5133.

Personnel: Total is 4 of which 2 are scientists and engineers.

Activities: Forest stand and forest estate simulation; growth responses to silvicultural treatments; Wildlife ecology - species, systems, interactions with forest management; Industry simulation and technological forecasting - forestry sector; Tropical forestry, agroforestry in third world.

Facilities: Various field instruction equipment - dendrology, wildlife monitoring; microcomputers (640K, 10Mb hard disk); Drawing/drafting.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation.

Language(s) in Which Services are Provided: english.

#### **NAZ-DAR CANADA LIMITED**

925 Roselawn Avenue, Toronto, Ontario, M6B 1B7.

##### **Research Unit**

Contact: J. Bruce Rivoire, V.P. Manufacturing,

Tel: (416) 789-5111.

Personnel: Total is 3 of which none are scientists and engineers.

Activities: Development and improvement of screen printing inks and related chemicals.

Facilities: Misc general lab equipment.

Current or Potential Work Performed for: self or parent company, other clients.

Nature of Work Performed for Others: consultation, testing and analysis.

Language(s) in Which Services are Provided: english.

#### **NELSON'S DAIRY**

180 Ormont Drive, Weston, Ontario, M9L 1N7.

##### **Nelson's R&D Labs**

Admin. Contact: Mr. Peter Calabretta, Vice-President,

Administration, Tel: (416) 742-6811.

Scientific Contact: Mr. A. Gelda, Director, R&D,

Tel: (416) 742-6811.

Personnel: Total is 9 of which 9 are scientists and engineers.

Activities: UHT dairy and non-dairy food products in the area of new product and process development.

Facilities: Pilot plant - 2 stage homogenizer; plate heat exchanger; steam kettle; Taylor - soft serve freezer; infra-red - fat analyser.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: english.

#### **NETWORK DATA SYSTEMS LIMITED**

500 Cockrane Drive, Markham, Ontario, L3R 5N7.

##### **Department of Network Data Systems**

Contact: W.O. Mustard, Vice-President,

Tel: (416) 475-8220.

Personnel: Total is 5 of which 3 are scientists and engineers.

Activities: Micro computer hardware and software; KSR interfaces for electronic typewriters; micro-computers to add up function, with software for WP and communications, thus allowing electronic typewriters to become office work stations; software security hardware and software; teletex hardware and software (contract with Telecom Canada).

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: english.

**NEW BRUNSWICK ELECTRIC POWER COMMISSION  
(THE)**

P.O. Box 2000, 515 King Street, Fredericton, New Brunswick, E3B 4X1.

**Chatham Generating Station**

P.O. Box 279, Chatham, New Brunswick, E1N 3A6.

Admin. Contact: Don McDonald, Plant Manager,  
Tel: (506) 773-9486.

Scientific Contact: P.J. Whalen, Director of R&D,  
Tel: (506) 458-4440.

Personnel: Total is 50 of which 5 are scientists and engineers. (Note: Part-time R&D personnel.)

Activities: Combustion research; coal oil mixtures; coal water mixtures; fluidized bed combustion; distributed mixing pulverized coal burners.

Facilities: One 10 MW and one 20 MW boiler; Turbine sets. C/W combustion; equipment and supporting services infrastructure one new 20MW circulating fluidized bed boiler IMMBTU/HR combustion test rig - fully instrumented for bench scale pulfumized fuel testing;

Current or Potential Work Performed for: self or parent company, government.

Nature of Work Performed for Others: contract R&D, testing and analysis.

Language(s) in Which Services are Provided: english.

**NEXUS ENGINEERING CORP.**

7000 Lougheed Highway, Burnaby, British Columbia, V5A 4K4.

**Nexus Engineering Corporation - R&D Department**

Admin. Contact: Barb Petty, Special Projects Manager,  
Tel: (604) 420-5322.

Scientific Contact: Peter van der Gracht, President,  
Tel: (604) 420-5322.

Personnel: Total is 10

Activities: Nexus has developed an extremely successful high frequency R&D team and facility which has successfully developed world class equipment for the reception and distribution of commercial satellite television, audio and data signals. Products include television modulators, processors, satellite receivers for C and Ku bands, stereo generation and modulation equipment, and combining networks. Low power television and FM broadcast transmitters and translators have also been developed. After slight design modification, all components are now available in both NTSC and PAL formats.

Facilities: RF Test Equipment; Video Test Equipment; Audio Test Equipment; Computer Aided Design Tools.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: english.

**NL CHEM CANADA INC.**

4 Place Ville-Marie, Suite 400, Montréal, Québec, H3B 4M5.

**Département technique**

3390 Marie-Victorin, Varennes, Québec, J0L 2P0.

Contact: Roger P. Beauline, Directeur des opérations,  
Tel: (514) 652-2931.

Personnel: Total is 13 of which 6 are scientists and engineers.

Activities: Research and development to improve the process and the product, develop new products and reduce costs and energy consumption.

Facilities: Atomic absorption device; X-ray machine; Flame photometer.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: french.

Note: Descriptive text has been translated from French.

**NORANDA INC.**

PO Box 45 Commerce Court W, Suite 4500, Toronto, Ontario, M5L 1B6.

**Noranda Research Centre/Centre de Recherche Noranda**

240 Hymus Boulevard, Pointe Claire, Québec, H9R 1G5.

Contact: Dr. P. (Peter) Tarasoff, Director of Research and Development, Tel: (514) 697-6640.

Personnel: Total is 135 of which 70 are scientists and engineers.

Activities: Industrial: mining methods and equipment; rock mechanics; mineral processing; non-ferrous extractive metallurgy; electrochemistry and electrochemical technology; metal casting and metal working processes; manufacturing methods; corrosion protection; alloys; electro-optic materials; process control and instrumentation; environmental technology; ecology.

Facilities: Mini plant equipment for hydrometallurgical (e.g. autoclaves and pyrometallurgical process development; pilot metal melting and casting facilities; 250-ton die casting machine; 75-ton fatigue testing machine for wire rope; dilatometer; computer assisted potentiostat-galvanostat; vacuum coaters; instrumentation for noise and vibration measurement and analysis; specialized equipment for photoreceptor characterization.

Current or Potential Work Performed for: self or parent company, government.

Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.

Language(s) in Which Services are Provided: both english and french.

**NORDCO LIMITED**

P.O. Box 8833, 23 Glencoe Drive, St. John's, Newfoundland, A1B 3T2.

**Research Unit**

Admin. Contact: Mr. Gerome Peddle, Vice President, Finance and Administration, Tel: (709) 364-1200.

Scientific Contact: F.D. Smith, President & Chief Executive Officer, Tel: (709) 364-1200.

Personnel: Total is 85 of which 65 are scientists and engineers.

Activities: Marine instrumentation; fisheries technology; offshore environment monitoring instruments; geotechnical instrumentation. Computer system modelling of ice/structure interaction and general ice interaction.

Facilities: Machine shop and equipment; computer equipment; electronic laboratory and equipment.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation.

Language(s) in Which Services are Provided: english.

**NORPAK CORPORATION**

10 Hearst Way, Kanata, Ontario, K2L 2P4.

**Research Unit**

Admin. Contact: Mr. H. Dewar, Manager, Contracts & Administration, Tel: (613) 592-4164.

Scientific Contact: D. Randy Carter, Vice-President, Engineering, Tel: (613) 592-4164.

Personnel: Total is 50 of which 40 are scientists and engineers.

Activities: Videotex general; teletext general; teletext broadcast equipment; videotex decoders; teletext decoders; NAPLPS picture creation systems; video systems; video data encoding and insertion; VLSI chip design; software systems; graphics creation algorithms; image digitization; automated graphics creation; graphics

human interface; error detection and correction; high speed digital signal recovery; echo cancellation.  
 Facilities: Video data insertion systems; videotex data bases; teletext broadcast equipment; EMI/RFI measurement range; screened room; RSX/UNIX/IDRIS/039 software dev. systems.  
 Current or Potential Work Performed for: self or parent company, government, other clients.  
 Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.  
 Language(s) in Which Services are Provided: english.

#### **NORTECH SURVEYS (CANADA) INC**

309 2nd Avenue South West, Calgary, Alberta, T2P 0C5.

##### **Advanced Technologies**

Contact: Dr. Gerard Lachapelle, Executive Vice-President  
 Advanced Technologies, Tel: (403) 262-0800.  
 Personnel: Total is 12 of which 10 are scientists and engineers.  
 Activities: Airborne navigation with integrated INS/GPS systems; Marine Navigation; Software development for positioning and navigation; Precise GPS differential positioning.  
 Facilities: Inertial navigation systems; Satellite Navigation Receivers (GPS); Intel System; Laser Profiler; Mainframe and field portable HP computers.  
 Current or Potential Work Performed for: self or parent company, government.  
 Nature of Work Performed for Others: contract R&D, testing and analysis.  
 Language(s) in Which Services are Provided: english.

#### **NORTHERN SOIL TECHNOLOGIES LTD**

P.O. Box 8637, Saskatoon, Saskatchewan, S7K 6K8.

##### **Research Unit**

Admin. Contact: David K. Grayson, President .  
 Scientific Contact: Dr. J.H. Stephens, Research Director,  
 Tel: (306) 664-4400.  
 Personnel: Total is 10 of which 6 are scientists and engineers.  
 Activities: The research and development of agricultural biotechnologies with emphasis on soil microbiological attitudes including numerous algae and bacterial species.  
 Facilities: Gas liquid chromatograph; Specific ion probes; pH meters; Centrifuge; Spectrophotometers; Microscopes.  
 Current or Potential Work Performed for: self or parent company, other clients.  
 Nature of Work Performed for Others: consultation.  
 Language(s) in Which Services are Provided: english.

#### **NORWEST SOIL RESEARCH LTD**

9938-67 Avenue, Edmonton, Alberta, T6E 0P5.

##### **Agricultural Research**

Admin. Contact: Mr. Jean-Michel Crepin, President,  
 Tel: (403) 438-5522.  
 Scientific Contact: Dr. J. Ashworth, Research Manager,  
 Tel: (403) 438-5522.  
 Personnel: Total is 8 of which 4 are scientists and engineers.  
 Activities: Agronomy; soil chemistry; soil reclamation; soil microbiology; biochemistry; primary pollutant; organics; feed quality; animal nutrition; food testing.  
 Current or Potential Work Performed for: self or parent company, government, other clients.  
 Nature of Work Performed for Others: contract R&D.  
 Language(s) in Which Services are Provided: english.

#### **NOVA ENERGY LIMITED**

40 Wright Avenue, Dartmouth, Nova Scotia, B3B 1G6.

##### **Research Unit**

Admin. Contact: John R. Farrell, Vice-President,  
 Tel: (902) 469-4425.  
 Scientific Contact: Barry V. Davis, President,  
 Tel: (902) 469-4425.  
 Personnel: Total is 6 of which 4 are scientists and engineers.  
 Activities: R&D in the field of low head / no head Hydro Electric Power Generation. Development of turbines which extract energy from the velocity of the stream or tidal flow. Units developed thus far generate 5 - 160 kW. Unit under development will produce one megawatt. Device developed by Nova Energy is referred to as a Vertical Axis Hydro Turbine (VAHT).  
 Current or Potential Work Performed for: self or parent company, government, other clients.  
 Nature of Work Performed for Others: contract R&D.  
 Language(s) in Which Services are Provided: english.

#### **NOVA/HUSKY RESEARCH CORPORATION LTD.**

1411 25th Avenue North East, Calgary, Alberta, T2E 7L6.

##### **Research Unit**

Admin. Contact: L. Taylor, Manager - Admin. Services,  
 Tel: (403) 276-9844.  
 Scientific Contact: G.B. Miller, President and Director of Research, Tel: (403) 276-9844.  
 Personnel: Total is 56 of which 24 are scientists and engineers.  
 Activities: All R&D performed relates to the operations of the parent companies (ie. NOVA, an Alberta Corporation and Husky Oil Ltd.) and their subsidiaries and affiliates. bioscience; chemical science; petrochemistry; geoscience; gas & fluid dynamics; electronics and instrumentation.  
 Facilities: Gas and liquid chromatography; microscopes; CAT Scanner; NMR.  
 Current or Potential Work Performed for: self or parent company.  
 Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.  
 Language(s) in Which Services are Provided: english.

#### **NOVALAB LTD**

9420 Côte de Liesse, Lachine, Québec, H8T 1A1.

##### **Research Section**

Contact: Dr. J.D. Fenwick, Vice-President,  
 Tel: (514) 636-6219.  
 Personnel: Total is 2 of which 2 are scientists and engineers.  
 Activities: Internal research on procedure development for organic analysis. Some research and development for Federal and Provincial Governments through RFP and unsolicited proposals through D.S.S.  
 Facilities: GC/Mass Spec.; CC; LC.  
 Current or Potential Work Performed for: self or parent company.  
 Nature of Work Performed for Others: testing and analysis.  
 Language(s) in Which Services are Provided: both english and french.

#### **NOVATEL COMMUNICATIONS LTD.**

700 Ninth Avenue South West, Calgary, Alberta, T2P 3V4.

##### **NovAtel Communications Ltd. (R&D & Manufacturing Division)**

Contact: Dr. Arunas G. Sleky, Senior Vice President,  
 R&D and Manufacturing, Tel: (403) 298-0402.  
 Personnel: Total is 151 of which 136 are scientists and engineers.  
 Activities: NovAtel's R&D Technology Expertise: Digital Hardware Logic Design; Analog/RF Circuit design; Real

time Software design; Industrial design; Mechanical design; Electronics packaging; VLSI design; Telephony; Digital communications; RF planning.  
 Facilities: Vax 11/780 and 11/785; Mentor Graphics VLSI System; Valid Scald CAE System; GE/Calma CAD System (PCB and Mech); NovAtel Aurora 800/400 MHz Cellular systems  
 Current or Potential Work Performed for: self or parent company, other clients.  
 Nature of Work Performed for Others: consultation.  
 Language(s) in Which Services are Provided: english.

#### NUCLEAR ACTIVATION SERVICES LIMITED

1280 Main Street West, Hamilton, Ontario, L8S 4K1.

##### Research Unit

Contact: Dr. E. Hoffman, Director of Marketing,  
 Tel: (416) 522-5666.

Personnel: Total is 4 of which 4 are scientists and engineers.

Activities: Analysis of trace elements by neutron activation analysis in the fields of geochemistry, life sciences, chemistry, pharmaceuticals; Instrumental neutron activation analysis (INAA) is an analytical technique dependent on the measurement of the number and energy of gamma and x-rays emitted by the radioactive isotopes produce in the sample matrix by irradiation with neutrons from a nuclear reactor. The neutron-induced radioactivity of each trace element emits a characteristic gamma ray energy spectrum hence and individual nuclear finger-print which can be measured and quantified. Activation analysis measures the total amount of an element in a material without regard to chemical or physical form and has the following advantages: Samples for INAA can be liquids, solids or powders; INAA is nondestructive. Since no prechemistry is required the problem of reagent-introduced contaminants is completely avoided; lack of postirradiation chemistry results in rapid, efficient, low cost, high quality analyses; INAA is a multielement analytical technique in that many elements can be readily analyzed simultaneously; The final significant advantage of INAA is its sensitivity to trace elements. This sensitivity is a function of the neutron flux, length of irradiation, resolution of the detector, matrix composition, and the 'total' sample size. These factors have pushed the detection limits of most elements of interest to very low levels, not achievable by other analytical techniques. Types of samples - A large variety of samples have been analyzed by INAA and include: geological and geochemical - rocks, soils, concentrates, doré beads; biogeochemical - vegetation, humus, coal; petrochemical - oils, oil distillates, associated petroleum related products such as polyethylene; food stuffs and pharmaceuticals - sugars, fish, animal feed, single cell protein, toothpaste, drugs; biological and medical - blood, tissues, fingernails, urine; environmental - filters, waters soils, fly ash; industrial applications - steels, wires, metals; Elements - The following list of elements are activated and may be determined quantitatively in a variety of matrices: Al, Sb, As, Ba, Br, B, Cd, Ca, Ce, Cs, Cl, Cr, Co, Cu, Cy, Eu, F, Gd, Ga, Ge, Au, Hf, In, I, Ir, Fe, La, Lu, Mg, Mn, Hg, Mo, Nd, Ni, Os, Pd, Pt, K, Re, Rh, Rb, Sm, Sc, Se, Ag, Na, Sr, Ta, Te, Tb, Th, Sn, Ti, W, U, V, Yb, Zn, Zr.

Facilities: Delated neutron system; prompt gamma system; 9 PHYGE MCA-computer systems; PDP 11/34, PDP 11/44, PDP 11/84 computers; 3 canberra multinput multichannel analysers.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.  
 Language(s) in Which Services are Provided: both english and french.

#### NUMETRIX LIMITED

8 King Street East, #1000, Toronto, Ontario, M5C 1B5.

##### Research Unit

Contact: Heidi Breslauer, General Manager,  
 Tel: (416) 362-1000.

Personnel: Total is 3 of which 1 is a scientist or engineer.

Activities: Resource scheduling; interactive graphics; CAD/CAM; business decision support tools.

Current or Potential Work Performed for: self or parent company.

Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.

Language(s) in Which Services are Provided: english.

#### NUTRINOR

C.P. 190 Desbiens, Lac St-Jean, Québec, G0W 1N0.

##### Unité-Pilote beurre réduit en calories

2200 Route 169, Chambord (Comté Roberval), Québec, G0W 2G0.

Admin. Contact: Laval Lapointe, Directeur cont. qualité,  
 Tel: (418) 346-5526.

Scientific Contact: Michel Lemay et Micheline Roux,  
 Agents de recherche, Tel: (418) 346-5526.

Personnel: Total is 2 of which 2 are scientists and engineers.

Activities: Applied research for the development of calorie-reduced butter.

Facilities: Pilot equipment for the production of calorie-reduced butter.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: french.

Note: Descriptive text has been translated from French.

#### OCEANROUTES CANADA INCORPORATED

Main Floor, 1496 Bedford Highway, Bedford, Nova Scotia, B4A 1E5.

##### Research Unit

Admin. Contact: Hugh Macpherson, President,  
 Tel: (902) 835-1617.

Scientific Contact: Joseph Seiler, Vice President,  
 Tel: (902) 835-1617.

Personnel: Total is 5 of which 5 are scientists and engineers.

Activities: Meteorology and oceanography. Spectral wave models.

Facilities: YGR computers.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation.

Language(s) in Which Services are Provided: english.

#### ONTARIO HYDRO

700 University Avenue, Toronto, Ontario, M5G 1X6.

##### Ontario Hydro Research Division

800 Kipling Avenue, Toronto, Ontario, M8Z 5S4.

Contact: Fred J. Kee, Director of Research,  
 Tel: (416) 231-4111.

Personnel: Total is 616 of which 268 are scientists and engineers.

Activities: The research division is a fully integrated laboratory and has expertise in electrical, mechanical, chemical, civil and metallurgical engineering and physics, chemistry and biology. The work is principally

associated with the technical and scientific needs of a large electric power utility, but these needs often overlap significantly with problems faced by other industries and government.

Facilities: High voltage laboratory; high current laboratory; high capacity pump test laboratory; SF6 substation laboratory; heavy mechanical test laboratory; combustion test facility.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.

Language(s) in Which Services are Provided: english.

#### **ONTARIO PAPER COMPANY**

80 King Street, St. Catharines, Ontario, L2R 7G2.

##### **Operations Technology, Research Department**

Allanburg Road, P.O. Box 1040, Thorold, Ontario, L2V 3Z5.

Contact: Anthony Yau, Director of Research,  
Tel: (416) 227-1121.

Personnel: Total is 14 of which 4 are scientists and engineers.

Activities: Process and production development relating to integrated pulp, newsprint and chemical by-products operation.

Facilities: Ultrafiltration unit.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: english.

#### **OPTECH INCORPORATED**

701 Petrolia Road, Downsview, Ontario, M3J 2N6.

##### **Research Unit**

Admin. Contact: Dr. A.I. Carswell, President,  
Tel: (416) 661-5904.

Scientific Contact: J.D. Houston, General Manager,  
Tel: (416) 661-5904.

Personnel: Total is 27 of which 16 are scientists and engineers.

Activities: We work in electro-optics in general and on laser systems in particular. Our main activity is the design and development of laser radar systems for atmospheric diagnostics (LIDAR), for water depth measurement (bathymetry) and for distance measurement (range finders). We do custom development as well as system manufacturing in these areas. We have broad experience in the field operation of ruggedized laser systems (airborne, shipborne or on land vehicles).

Facilities: Laser development systems; electro-optical testing equipment; environmental test chamber; computer facilities; microprocessor development system.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation.

Language(s) in Which Services are Provided: english.

#### **OPTICAL ART CAMERA CORPORATION**

150 Kent Street, Suite 405, Ottawa, Ontario, K1P 5P4.

##### **Research Unit**

Contact: Andre Proulx, President, Tel: (613) 238-5764.

Personnel: Total is 2 of which 2 are scientists and engineers.

Activities: Motion graphic computerized film animation systems.

Facilities: System III.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: both english and french.

#### **OPTIKON CORPORATION LTD (THE)**

410 Conestogo Road, Waterloo, Ontario, N2L 4E2.

##### **Research Unit**

Admin. Contact: M. Vassiliadis, President,  
Tel: (519) 885-2551.

Scientific Contact: S. Daicos, Engineering Supervisor,  
Tel: (519) 885-2551.

Personnel: Total is 3 of which 3 are scientists and engineers.

Activities: Laser alignment systems-optical hardware development; spectroradiometric systems-photometric evaluation systems; transmissometric and reflectometric systems development.

Facilities: Spectro radiometer model 710; pritchard photometer; spectral analysis microcomputer; luminance standard LS-65; spectral illuminance standards; spectral calibration facility.

Current or Potential Work Performed for: government, other clients.

Nature of Work Performed for Others: consultation, testing and analysis.

Language(s) in Which Services are Provided: both english and french.

#### **OPTO-ELECTRONICS INC.**

2538 Speers Rd; Units 8, 9 & 10, Oakville, Ontario, L6L 5K9.

##### **Research Unit**

Contact: Dr. B.K. Garside, President, Tel: (416) 827-6214.

Personnel: Total is 17 of which 17 are scientists and engineers.

Activities: Company fields of expertise are in the areas of industrial control instrumentation, fiber optic systems, optical communications, electro-optics & instrumentation, fast optical sources & detectors, high voltage pulse techniques, solid state electronics, laser devices, and sensors & transducers. Past year activities include new product development and manufacturing as well as contract research on special ultra-high speed photodetectors, ultra-high speed diode laser light sources, tunable infrared diode lasers, and a line of industrial electro-optical process monitors & controllers. The company has introduced an average of at least four products per year. Current research projects include ultra-fast photodetectors, ultra-fast laser diode sources, industrial monitors and controllers, a fiber optic data link, high voltage pulse measurements, an electronic streak camera, high-speed optical switches, fiber-based liquid sensors, diffused planar optical waveguide structures and infrared sources, and detectors based on lead salt materials.

Facilities: Solid state device fabrication equipment; fiber optical device test equipment; optical testing capability; ultra high speed signal detection systems.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D.

Language(s) in Which Services are Provided: english.

#### **OPTOTEK LIMITED**

1283 Algoma Road, Ottawa, Ontario, K1B 3W7.

##### **Optotek Limited R&D Laboratory**

Admin. Contact: Randy North, Project Manager,  
Tel: (613) 746-3100.

Scientific Contact: David I. Kennedy, President,  
Tel: (613) 746-3100.

Personnel: Total is 15 of which 7 are scientists and engineers.

Activities: Optoelectronic display system technology; light-emitting diode material preparation and device fabrication technology; infrared photodetector device

fabrication (specialization cadmium mercury telluride); gallium arsenide field effect transistors and integrated circuits for microwave communications and digital integrated circuit applications.  
 Facilities: Specialized semiconductor processing and test equipment.  
 Current or Potential Work Performed for: government, other clients.  
 Nature of Work Performed for Others: contract R&D.  
 Language(s) in Which Services are Provided: english.

#### ORION ELECTRONICS LIMITED

Church Point, Digby County, Nova Scotia, B0W 1M0.  
**Research Unit**  
 Contact: Hugh Roddis, President, Tel: (902) 769-3059.  
 Personnel: Total is 3 of which 1 is a scientist or engineer.  
 Activities: Radio propagation related to direction finding in VHF and UHF; development of special radio DF equipment; miniaturization of radio equipment including transmitters; microprocessor control circuitry for use within electronic equipment.  
 Facilities: Spectrum analyzer to 2GHz; antenna test range.  
 Current or Potential Work Performed for: self or parent company, government, other clients.  
 Nature of Work Performed for Others: contract R&D.  
 Language(s) in Which Services are Provided: both english and french.

#### OVERBURDEN DRILLING MANAGEMENT LIMITED

3 Cleopatra Drive, Nepean, Ontario, K2G 3M9.  
**Research Unit**  
 Contact: Stuart Averill, President, Tel: (613) 226-1774.  
 Personnel: Total is 3 of which 3 are scientists and engineers.  
 Activities: Equipment Engineering. Heavy Mineral Concentrating Technology.  
 Current or Potential Work Performed for: self or parent company, government, other clients.  
 Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.  
 Language(s) in Which Services are Provided: english.

#### P.R.A. INTERNATIONAL

45 Meg Drive, London, Ontario, N6E 2V2.  
**Research Unit**  
 Admin. Contact: Dr. R. Lyke, Vice-President, Tel: (519) 686-2950.  
 Scientific Contact: R.L. Lyke, Director, Research, Tel: (519) 686-2950.  
 Personnel: Total is 15 of which 10 are scientists and engineers.  
 Activities: Pulsed and CW gas laser research; dye laser studies; photochemistry and photophysics; molecular spectroscopy; computer hardware and software; optics; electronic development.  
 Facilities: HP 3000 Computer; PHP 11 computers; Hamamatsu Streak camera; optical test equipment; microprocessor system.  
 Current or Potential Work Performed for: self or parent company, government, other clients.  
 Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.  
 Language(s) in Which Services are Provided: english.

#### PACIFIC TRIDENT MARICULTURE LTD.

110 View Royal Ave., Victoria, British Columbia, V9B 1A7.  
**Research Unit**  
 Contact: R. Guy Whyte, President, Tel: (604) 478-2031.  
 Personnel: Total is 8 of which 5 are scientists and engineers.

Activities: Mariculture  
 Facilities: Fully equipped and operating mariculture hatchery.  
 Current or Potential Work Performed for: self or parent company.  
 Language(s) in Which Services are Provided: english.

#### PALADIN HYBRIDS INC

Box 219, Brampton, Ontario, L6V 2L2.  
**Agricultural Research**  
 P.O. Box 219, Brampton, Ontario, L6V 2L2.  
 Contact: Paul G. Arnison, Research Director, Tel: (416) 846-3983.  
 Personnel: Total is 9 of which 5 are scientists and engineers.  
 Activities: Plant cell and tissue culture, anther and microspore culture - largely specialized on Brassica crops with some interest in corn and forages. Development and evaluation of Hybrid Systems for Brassica crops - involves studies of incompatibilities and CMS Systems. Molecular biology of microspore development. Plant breeding- evaluation of Doubled Haploids, selection of inbred lines with improved agronomic performance.  
 Current or Potential Work Performed for: self or parent company, other clients.  
 Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.  
 Language(s) in Which Services are Provided: english.

#### PAYTON SCIENTIFIC LIMITED

120 Milner Avenue, Unit 9, Scarborough, Ontario, M1S 3R2.  
**Research Unit**  
 Admin. Contact: Robert W. Baker, President, Tel: (416) 298-9600.  
 Scientific Contact: Douglas Bush, Research Director, Tel: (416) 298-9600.  
 Personnel: Total is 10 of which 3 are scientists and engineers.  
 Activities: Development of medical instruments for blood platelet studies. Development of industrial and forensic science instruments.  
 Current or Potential Work Performed for: self or parent company, other clients.  
 Nature of Work Performed for Others: contract R&D.  
 Language(s) in Which Services are Provided: english.

#### PCO SERVICES LTD

232 Norseman Street, Toronto, Ontario, M8Z 2R4.  
**Chemical Research International**  
 2697 Slough Street, Mississauga, Ontario, L4T 1G2.  
 Admin. Contact: Dave Smith, President, Tel: (416) 231-7276.  
 Scientific Contact: W.D. Blaine, Director of Research, Tel: (416) 671-1898.  
 Personnel: Total is 3 of which 3 are scientists and engineers.  
 Activities: Biological testing of pesticides in regard to Government registration; pesticide residue sampling; development of integrated pest management programs for agriculture.  
 Facilities: Gas chromatography; Potter Tower; insect rearing facilities; rodent rearing facilities.  
 Current or Potential Work Performed for: self or parent company, government, other clients.  
 Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.  
 Language(s) in Which Services are Provided: english.

**PEIRSON BUILDING SYSTEMS LTD.**

P.O. Box 207, 116 Hunter Street West, Peterborough, Ontario, K9J 6Y8.

**Research Unit**

Contact: D.A. Lynch, Manager, Tel: (705) 743-3073.

Personnel: Total is 4 of which 1 is a scientist or engineer.

Activities: Building systems development for arctic conditions; plumbing, heating, ventilation equipment development for energy efficiency; electrical development for energy efficiency; design development for local labour.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.

Language(s) in Which Services are Provided: english.

**PEMBINA RESOURCES LTD**

P.O. Box 1948, 734 7th Avenue South West, Calgary, Alberta, T2P 2M7.

**Research and Development Department**

Contact: Dr. E. St. Denis, Director, Research & Engineering, Tel: (403) 294-5718.

Personnel: Total is 5 of which 4 are scientists and engineers.

Activities: The Research Department's main focus is the transportation of bulk commodities by pipeline including slurry and pneumatic capsules.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, testing and analysis.

Language(s) in Which Services are Provided: english.

**PENGALTA RESEARCH & DEVELOPMENT LTD**

7410 Blackfoot Trail S.E., Calgary, Alberta, T2H 1M5.

**Pengalta Research & Development Test Facility**

Contact: Mr. Terry Kimmel, President, General Manager, Tel: (403) 252-1993.

Personnel: Total is 5 of which 3 are scientists and engineers.

Activities: Heavy oil developmental hardware and demonstration systems; oil sands developmental hardware and demonstration systems; diffusion separation process technology; research and development services in mechanical engineering, design development and testing related to the energy industries.

Facilities: Heavy oil production simulator.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, testing and analysis.

Language(s) in Which Services are Provided: english.

**PERCEPTRON COMPUTING INC.**

4800 Dufferin Street, suite 202, Downsview, Ontario, M3H 5S8.

**Research Unit**

Admin. Contact: W.M. Strome, President, Tel: (416) 736-0452.

Scientific Contact: Berne Grush, Technical Director, Tel: (416) 736-0452.

Personnel: Total is 20 of which 14 are scientists and engineers.

Activities: Scientific Software Development Tools; Image Analysis Software; Geocoded Information Software; Digital Archiving Systems; Turnkey Image Analysis Systems; Contract Software R&D.

Facilities: Computers and Image display Devices.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation.

Language(s) in Which Services are Provided: english.

**PETRO-CANADA**

P.O. Box 2844, Calgary, Alberta, T2P 3E3.

**Petro-Canada Resources, Research & Development Division**  
40 Research Place, North West, Calgary, Alberta, T2L 1Y6.

Admin. Contact: Mike Goss, Manager of Laboratory and Technology Services, Tel: (403) 296-5958.

Scientific Contact: G.C.M. Derbowka, Senior Director, R&D, Tel: (403) 296-5913.

Personnel: Total is 176 of which 81 are scientists and engineers.

Activities: Exploration, production and process research related to fuel and energy resources. Main emphasis is on offshore exploration and development; conventional oil and gas exploration and production; oil sands and heavy oil recovery technology; upgrading of heavy oil; and refining.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: english.

**PETROLEUM RECOVERY INSTITUTE**

3512-33rd St. N.W., Calgary, Alberta, T2L 2A6.

**Research Unit**

Contact: Conrad Ayesse, Executive Director, Tel: (403) 282-1211.

Personnel: Total is 31 of which 10 are scientists and engineers.

Activities: Objective is to conduct research in the field of petroleum production from underground reservoirs with emphasis on enhanced oil recovery techniques such as steam flooding, chemical flooding, miscible flooding, as well as fundamental studies of fluid properties, phase behaviour and flow through porous media.

Facilities: 8 laboratories for experimental work and geological studies.

Current or Potential Work Performed for: other clients.

Language(s) in Which Services are Provided: english.

**PHILIPS INFORMATION SYSTEMS LTD**

600 Dr. Frederik Philips Blvd., St-Laurent, Québec, H4M 2S9.

**Research Unit**

Admin. Contact: Michel Racicot, V.P. and General Counsel, Tel: (514) 744-7252.

Scientific Contact: Yat Sang Kwong, Director - Advances Development, Tel: (514) 744-8200.

Personnel: Total is 135 of which 115 are scientists and engineers.

Activities: Office automation - hardware and software development.

Facilities: CAD Machine; VAX Computers; UNIX Machines.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: english.

**PHILLIP J. RICHARDSON & ASSOCIATES INC.**

1500 Fisher Street, North Bay, Ontario, P1B 2H3.

**Research Unit**

Contact: Eleanor Richardson, Secretary/Treasurer, Tel: (705) 472-6118.

Personnel: Total is 8 of which 2 are scientists and engineers.

Activities: Computer software.  
Facilities: Computer equipment.  
Current or Potential Work Performed for: self or parent company.  
Language(s) in Which Services are Provided: english.

#### **PHILLIPS PAINT PRODUCTS (1968) LTD**

95 Paquin Road, Winnipeg, Manitoba, R2J 3V9.

##### **Research Unit**

Admin. Contact: M. Bernstein, Technical Director,

Tel: (204) 661-6781.

Scientific Contact: T. Tonogai, Chief Chemist,

Tel: (204) 661-6781.

Personnel: Total is 5 of which 3 are scientists and engineers.

Activities: Industrial coatings; chemical coatings; corrosion control coatings.

Facilities: QUV weathering; IR spectrophotometer; color spectrophotometer; salt spray; general paint testing.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: english.

#### **PHOTOGRAPHIC ANALYSIS LIMITED**

210 Don Park Road, Unit 12, Markham, Ontario, L3R 2V2.

##### **Research Unit**

Contact: Donal L. Clayton, President, Tel: (416) 475-6052.

Personnel: Total is 1 of which 1 is a scientist or engineer.

Activities: Photo-instrumentation: High Speed Motion Picture and Time-Lapse Motion Picture Photography services, equipment sales and equipment rentals for research and development applications. Photo-instrumentation is the use of photo-sensitive materials and optical systems for detection of engineering and scientific phenomena and as an aid to the eye in overcoming its limitations of time, illumination, distance, area and storage ability. Photo-instrumentation has four main purposes: to record images that may be stored, duplicated, transmitted and analyzed either quantitatively or qualitatively; to arrest motion of rapidly occurring events that normally appear as a blur to the eye; to compress or extend the normal time base by the utilization of time-lapse or high speed motion picture techniques; to go where it is impossible or hazardous for the human observer. Another important aspect of Photo-instrumentation is that it does not place any restrictive loading on the subject being studied, so that the subject may be observed within normal or abnormal parameters without any external influence. Time and other pertinent data can be recorded simultaneously on film perfectly correlated to the picture on film. Unlike many forms of instrumentation, it can record information through all phases for the event from initiation to completion of the event.

Facilities: 3-LOCAM high speed cameras 2-500 pictures per second; 3-HYCAM high speed cameras 20-11,000 pictures per second; 2-time-lapse cameras c/w intervalometers; digitizing equipment for digital analysis of data contained in films; Reflex Auto-collimator for determining quality of lenses and filters and adjustment of optical systems; Precision Reticle Projector for measuring distortions of lenses and optic systems.

Current or Potential Work Performed for: government, other clients.

Nature of Work Performed for Others: consultation, testing and analysis.

Language(s) in Which Services are Provided: english.

#### **PICKER INTERNATIONAL CANADA INC**

70 Bramalea Road, Bramalea, Ontario, L6T 2W8.

##### **Picker International Canada Inc. - Bramalea Engineering**

26 Victoria Crescent, Bramalea, Ontario, L6T 1E5.

Admin. Contact: Ray W. Hopper, Vice President &

General Manager, Tel: (416) 791-3422.

Scientific Contact: Dr. N. Ramanathan, Research Physicist, Tel: (416) 791-3422.

Personnel: Total is 32 of which 8 are scientists and engineers.

Activities: Semiconductor X-Ray Sensors: Development and testing of x-ray sensitive materials, development of electronic read-out for diagnostic radiologic imaging, investigation of x-ray sensitive thin film panels for direct visual read-out of x-ray images. Laser Scanning: Design and development of large area laser scanners with intensity modulation for printing of x-ray images. Development of medical x-ray patient positioning devices.

Facilities: Computer controlled X-Ray generator; microdensitometer; digital image data acquisition and processing system - under consideration.

Current or Potential Work Performed for: self or parent company, government.

Nature of Work Performed for Others: contract R&D, testing and analysis.

Language(s) in Which Services are Provided: english.

#### **PIRELLI CABLES INC.**

1981 McGill College Avenue, Montréal, Quebec, H3A 2X6.

##### **Materials Laboratory**

65 Richelieu, St-Jean, Québec, J3B 6X2.

Admin. Contact: F. D'Arcangelo, Assistant Manager -

Materials Laboratory, Tel: (514) 658-1731.

Scientific Contact: R.D. Rosevear, Vice-President & Chief Engineer, Tel: (514) 282-1540.

Personnel: Total is 11 of which 4 are scientists and engineers.

Activities: Development of electrical wire and cables - HV paper insulated cables, MV and HV extruded cables, telecommunication cables including fibre optics.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: both english and french.

#### **PLASTIBETON INC**

5600 Hochelaga Street, Suite 300, Montreal, Quebec, H1N 3L7.

##### **Research Unit**

Contact: Peter F. Trent, President, Tel: (514) 254-6071.

Personnel: Total is 4 of which 1 is a scientist or engineer.

Activities: Polymer concrete, reconstituted stone.

Facilities: Physical testing apparatus - compressive/flexural; abrasion tester; pilot plant manufacturing equipment.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: both english and french.

#### **PLASTIQUES L.P.A. (1976) LTEE**

R.R. #3, Route 243, Mansonville, Québec, J0E 1X0.

##### **Research Unit**

Contact: Pierre J. Arcouette, Président,

Tel: (514) 292-3574.

Personnel: Total is 2 of which 2 are scientists and engineers.

Activities: Use of rotational procedure for scientific applications. Construction of plastic parts up to 50 feet

long, currently produced for high technology marine buoys used in the scientific research field. Military application, analysis of seabeds to a depth of 4,000 metres. For scientific and technological information, contact: Electronics Division, J.L. Electron, 135 St-Germain West, Rimouski, Québec, G5L 4B6, Tel: (418) 724-6811, Jacques Landry, President. All the above-mentioned work is for export projects.

Facilities: Rotational equipment; scientific research laboratory (use of the laboratory facilities of Dupont Canada in Landsdowne, Ontario, for plastic materials).

Current or Potential Work Performed for: self or parent company, other clients.

Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.

Language(s) in Which Services are Provided: both english and french.

Note: Descriptive text has been translated from French.

#### **POCATEC LTEE**

85 route 132 ouest, La Pocatière, Québec, G0R 1Z0.

##### **Research Unit**

Contact: Carl Cassista, Directeur général,  
Tel: (418) 856-1454.

Personnel: Total is 2 of which 2 are scientists and engineers.

Activities: Communication (PA) systems; battery chargers; power supply unit (single outlet, triple outlet); thermostats; various electronic devices; optical fibres; microprocessor controller.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation.

Language(s) in Which Services are Provided: both english and french.

Note: Descriptive text has been translated from French.

#### **POELES ST-GEORGES INC (LES)**

798 8ième rue est, La Guadeloupe, Québec, G0M 1G0.

##### **Poêles St-Georges Inc (Les)**

Admin. Contact: Gilles Grondin, Director of Marketing,  
Tel: (418) 459-6458.

Scientific Contact: Claude Roy, General Manager,  
Tel: (418) 459-6458.

Personnel: Total is 3 of which 1 is a scientist or engineer.

Activities: Research and development is primarily on new products such as slow-combustion stoves, dual-energy furnaces (wood-electricity), proportional control mechanical thermostats for solid combustion stoves, zero-clearance stoves. The purpose of all research conducted on these products is to improve the cleanliness and efficiency of our products, to meet product certification requirements and ensure a minimum of maintenance and supervision while at the same time producing an appealing product.

Facilities: Digital thermometer; two 10-channel receptors connected to K-type thermocouple probes; Bacharach fyrite gas analysers (o2 and co2); Bacharach Drafrite (for draft); flowmeter; and magnetic thermometers.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: both english and french.

Note: Descriptive text has been translated from French.

#### **POLAR TECH LTD**

676 Wain Road, RR 1, Sidney, British Columbia, V8L 3R9.

#### **Research Unit**

Contact: Dr. R.D. Hudson, President, Tel: (604) 656-9131.

Personnel: Total is 4 of which 3 are scientists and engineers.

Activities: Electronic design and manufacture, specialising in low power, ruggedised instrumentation, analog and digital sensor interfacing, and field installations. Specialty design in arctic instrumentation, sea ice physics, acoustic wave analysis, real-time data collection and analysis, satellite communication, oceanographic custom designs, meteorological instrument design, offshore structures instrumentation, short-hop radio data collection, geotechnical instruments, computer control and analysis.

Facilities: Water-tight Computers; Ice Load Drums; Thru-ice Acoustic Sensors; Flexing Automatic Weather Stations; Logic Probes; Ice Chamber/Sonar Tank.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.

Language(s) in Which Services are Provided: both english and french.

#### **POLYGON INDUSTRIES LTD**

50 Northline Road, Toronto, Ontario, M4B 3E2.

##### **Research Unit**

Contact: P.D. Smith, Director, Research & Development,  
Tel: (416) 755-3301.

Personnel: Total is 4 of which 2 are scientists and engineers.

Activities: Electrical power apparatus (transformers and switchgear) design and testing; testing and development of electrical insulation systems; high voltage dry-type testing to 200kv impulse, 100kv power frequency, apparatus heat runs and thermal testing; controlled insulation thermal aging tests.

Current or Potential Work Performed for: self or parent company, other clients.

Nature of Work Performed for Others: testing and analysis.

Language(s) in Which Services are Provided: english.

#### **POLYRESINS INC.**

44 Beechwood Drive, P.O. Box 1725, Station R., Toronto, Ontario, M4G 4A3.

##### **Polyresins Division Research & Development**

P.O. Box 1725, Station R, Toronto, Ontario, M4G 4A3.

Admin. Contact: M.J. Skasko, Vice-President and General Manager, Tel: (416) 425-4010.

Scientific Contact: F.A. Pugsley, Technical Director,  
Tel: (416) 425-4010.

Personnel: Total is 7 of which 7 are scientists and engineers.

Activities: Protective Coatings; Solution Acrylics, emulsions, alkyds, plasticizers; Adhesives; Polyvinyl Acetates, pressure sensitive adhesives solutions and emulsions; Sodium Polyacrylate solutions; Alkali Swellable emulsions; Viscosifiers; Crosslinking Emulsions & Solutions.

Facilities: IR Speztro photometer; Gas Liquid Chromatograph; UV Visible spectrophotometer

Current or Potential Work Performed for: self or parent company.

Nature of Work Performed for Others: consultation.

Language(s) in Which Services are Provided: english.

#### **POLYSAR LIMITED**

201 Front St. N., Polysar Bldg, Sarnia, Ontario, N7T 7V1.

#### **Corporate Research & Development Division**

Polysar Ltd. R&D Bdg., S. Vidal Street, Sarnia, Ontario, N7T 7M2.

Admin. Contact: T.W.G. Deeprose, Facilities Manager, CR & A&E, Tel: (519) 337-8251.

Scientific Contact: Dr. B.J. Hutchinson, Director, Corp. Res. & Dev., Tel: (519) 337-8251.

Personnel: Total is 27 of which 17 are scientists and engineers.

Activities: Mainly exploratory research and development in polymeric fields with subsidiary interests in non-polymeric materials. Specialties include polymerization science, materials science, fundamental reaction mechanisms, etc.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: english.

#### **Elastomers Research & Development Division**

Polysar Ltd. R&D Bdg., S. Vidal Street, Sarnia, Ontario, N7T 7M2.

Admin. Contact: R.C. Burkey, Manager of Technical Facilities, Tel: (519) 337-8251.

Scientific Contact: K. Ascroft, Manager, ERDD, Tel: (519) 337-8251.

Personnel: Total is 204 of which 98 are scientists and engineers.

Activities: Research and development in the field of synthetic elastomers, ranging from basic research through process research to applications development. Areas of specialization - Tire rubbers, oil and heat resistant rubbers (hoses and seals), Plastic reinforcement, impermeable rubber (inner tubes and liners and membranes), compounding studies.

Facilities: Central lab services, operated by ERDD. Electron microscope (Phillips); image analyser (Bausch & Lomb); gas chromatograph/mass spectrometer (Finnigan); 250 MHz FT-NMR (Bruker); fully equipped analytical section; flexible pilot plant. FT-IR BRUKER (IFS 85) SEM (JEOL).

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: english.

#### **Latex Research Department, Latex Division**

Polysar Ltd., R&D Bdg., S. Vidal Street, Sarnia, Ontario, N7T 7M2.

Admin. Contact: H.S.J. Slooten, Research Manager, Latex, Tel: (519) 337-8251.

Scientific Contact: Dr. V.G. Xanthopoulos, Manager, Latex Technical, Tel: (519) 332-1212.

Personnel: Total is 28 of which 13 are scientists and engineers.

Activities: Synthetic rubber lattices research and development. Specializations - paper coating, carpet adhesives and foam backing, general foam applications, non-solvent adhesives, textile treatment including non-wovens, cement and asphalt additives.

Facilities: Uses ERDD Central Services as primary analytical source. Carpet making pilot plant; colloid science instruments.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: english.

#### **Styrenics & Resin/Olefins, Monomers & Energy R&D Group**

Polysar Ltd., R&D Bdg. S. Vidal Street, Sarnia, Ontario, N7T 7M2.

Contact: Dr. John Kwok, Research Manager, Styrenics, Tel: (519) 337-8251.

Personnel: Total is 20 of which 12 are scientists and engineers.

Activities: Research and development in the field of styrene monomer and styrene polymer on both crystal and high impact forms, primarily seeking improvements in raw material, feedstocks, process technology, products and application.

Facilities: Uses ERDD central services as primary analytical source. Standard plastic laboratory equipment.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: english.

#### **POS PILOT PLANT CORPORATION**

118 Veterinary Road, Saskatoon, Saskatchewan, S7N 2R4.

##### **Research Unit**

Admin. Contact: Roy A. Carr, President, Tel: (306) 665-7791.

Scientific Contact: Paul Fedec, Director of Research, Tel: (306) 665-7791.

Personnel: Total is 26 of which 7 are scientists and engineers.

Activities: POS specializes in oils and oilseed processing, proteins, starches and various other food processes. Unit processed at POS in both lab and pilot scale include: solvent extraction, dry and wet separation, crushing, milling and drying.

Facilities: 2 solvent extractors; 7 different dryers; wet and dry mills; 5 different centrifuges; air classifier; various seed cleaners and sieves.

Current or Potential Work Performed for: government, other clients.

Nature of Work Performed for Others: contract R&D, testing and analysis.

Language(s) in Which Services are Provided: both english and french.

#### **POSS DESIGN LIMITED**

1 West Avenue South, Hamilton, Ontario, L8N 2R9.

##### **Protein Foods Group Inc**

Admin. Contact: David Emery, Director of Sales & Marketing, Tel: (416) 522-9214.

Scientific Contact: Dr. C. Findlay, Director of Research & Development, Tel: (416) 522-9214.

Personnel: Total is 2 of which 2 are scientists and engineers.

Activities: Separation of meat tissues from bones; re-structuring meat tissues.

Facilities: Poss Mechanical Separator.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: testing and analysis.

Language(s) in Which Services are Provided: english.

#### **POTASH CORPORATION OF SASKATCHEWAN MINING LTD**

410-22nd St. E., Saskatoon, Saskatchewan, S7K 5T7.

##### **Research and Development Department**

Sedco Centre, Saskatchewan Research Park, Saskatoon, Saskatchewan, S7K 3X5.

Contact: Dr. Graeme G. Strathdee, Director, Research and Development, Tel: (306) 933-8819.

Personnel: Total is 35 of which 15 are scientists and engineers.

Activities: Mining equipment development and methods; rock mechanics; geology; seismicity; geophysics; conveyor systems; tailings drop pipe; flotation; compaction; crystallization; process development; process instrumentation; electrostatic separation; tails pile stability; brine migration in soils; salt dust transport in air; potash agronomic research; mine modeling and simulation; risk analysis.

Facilities: Pilot plants of capacities 1 to 2 tonne per hour of ore feed for the process operations of flotation, compaction, crystallization, electrostatic separation, crushing and screening. Analytical facilities for on-line measurement of slurry densities and composition; x-ray fluorescence; infrared spectroscopy; particle size analysis; quality evaluation of fertilizer materials. Hydraulic circuits for testing fire resistant fluids; experimental facilities at the University of Saskatchewan.

Current or Potential Work Performed for: self or parent company, government.

Nature of Work Performed for Others: contract R&D.

Language(s) in Which Services are Provided: both english and french.

## **POWER CHEMICALS LIMITED**

20 Canal Street, Dartmouth, NS, B2Y 2W3.

### **Research Unit**

Admin. Contact: Dr. Jan Kwak, Research Director & Product Development, Tel: (902) 463-1537.

Scientific Contact: Dr. Jan C.T. Kwak, Chemist, Tel: (902) 424-3680.

Personnel: Total is 2 of which 2 are scientists and engineers.

Activities: Developing new, and improving old, products used in the sanitation industry. Broad product categories include: cleaners, floor finishes, disinfectants, hand soaps, waxes, deodorants.

Facilities: Scale; magnetic stir heater; PH meter; refractometer.

Current or Potential Work Performed for: self or parent company.

Nature of Work Performed for Others: consultation.

Language(s) in Which Services are Provided: english.

## **PRATT & WHITNEY CANADA INC.**

1000 Marie-Victorin Boulevard, Longueuil, Québec, J4K 4X9.

### **Pratt & Whitney Canada - Engineering Group**

Admin. Contact: Ismael Awan, Manager, Engineering Resources, Tel: (514) 677-9411.

Scientific Contact: Mr. S. Monaghan, Chief, Research & Development Support, Tel: (514) 677-9411.

Personnel: Total is 2193 of which 845 are scientists and engineers.

Activities: Main field of R&D: Aircraft gas turbine engines - basic research and applied research, design, fabrication of prototype engines, test, continuous improvement of product.

Facilities: Test cells; aerodynamic and stress rigs; test aircraft; CAD/CAM equipment.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.

Language(s) in Which Services are Provided: both english and french.

## **PRIOR DATA SCIENCES LTD**

39 Highway 7, Bell Mews Plaza, Suite 232, Nepean, Ontario, K2H 8R2.

### **Research Unit**

Admin. Contact: Kay Stephens, Office Administrator, Tel: (613) 820-7235.

Scientific Contact: David Moss, Director, Engineering, Tel: (613) 820-7235.

Personnel: Total is 53 of which 46 are scientists and engineers.

Activities: Graphics (GKS for Unix); communications; data acquisition and control; speech recognition; air traffic control; robotics; remote sensing; computerized weigh scales; automated vehicle monitoring.

Facilities: PDP-11/44; IBM-PC; WICAT 68000; ORCA 3000.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.

Language(s) in Which Services are Provided: both english and french.

### **Research Unit**

144 Front St. W., Suite 201, Toronto, Ontario, M5J 1G2.

Admin. Contact: Lorraine Coady, Office Administrator, Tel: (416) 596-1429.

Scientific Contact: Jim Matthews, Manager, Tel: (416) 596-1429.

Personnel: Total is 15 of which 12 are scientists and engineers.

Activities: Graphics (GKS/C for Unix); communications; data acquisition and control; speech recognition; air traffic control; robotics; remote sensing; computerized weight scales; automated vehicle monitoring.

Facilities: LSI-11.

Current or Potential Work Performed for: government, other clients.

Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.

Language(s) in Which Services are Provided: english.

### **Research Unit**

Suite 812, 2000 Barrington Street, Halifax, Nova Scotia, B3J 3K1.

Scientific Contact: Kevin Ives, Manager, Tel: (902) 423-1331.

Personnel: Total is 2 of which 2 are scientists and engineers.

Activities: Graphics (GKS/C for Unix); communications; data acquisition and control; speech recognition; air traffic control; robotics; remote sensing; computerized weigh scales; automated vehicle monitoring.

Current or Potential Work Performed for: government, other clients.

Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.

Language(s) in Which Services are Provided: english.

## **PROCESS & INVENTIONS CORPORATION**

5516 - 40 Street S.E., Calgary, Alberta, T2C 2A1.

### **Research Unit**

Admin. Contact: B.T. Johnson, President, Tel: (403) 236-5655.

Scientific Contact: Dr. A.H. Vroom, Director of Research, Tel: (404) 236-5655.

Personnel: Total is 8 of which 4 are scientists and engineers.

Activities: Elimination of acid rain by quick chemically and water based removal of all impurities, including sulfur, trace metals and fly ash impurities. Heavy oil upgrading, from tar sands or other heavy crude products, to a medium-gravity crude, suitable for pipelining and for refining in standard refining facilities - costs (capital) of less than 1% of costs of proposed \$3.2B Lloydminster (Husky) proposal of 1985-86. High efficiency gold concentration equipment. Non-reluctance electrical generators (more than 100% efficient). New in-site placed hard rock gold recovery system, using new non-poisonous solution system, etc., good at low temperature.

Facilities: Member scientists have own equipment. All electrical and mechanical work is contracted by Danecraft Mechanical Design Limited, of Calgary.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.  
Language(s) in Which Services are Provided: english.

#### **PROCESS-INSTRUMENT SYSTEMS LIMITED**

39 Doughton Road, Concord, Ontario, L4K 1P8.

##### **Research Unit**

Admin. Contact: Oskar Strnad, Vice President,  
Tel: (416) 823-2267.

Scientific Contact: George Albert Rice, President,  
Tel: (416) 823-2267.

Personnel: Total is 1 of which 1 is a scientist or engineer.

Activities: Intelligent field mounted controls for process industries; monitoring systems for industrial use, e.g. alarm systems for power plants; computer process automation systems; fiber-optic multiplexing; computerized animal feed systems; operator interface for programmable controls; security and fire alarm/monitoring; sequence of event recording equipment; low power computer controls; process control software.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: english.

#### **PROCTER AND GAMBLE INC**

2 St. Clair Avenue West, Toronto, Ontario, M5W 1C5.

##### **Product Development Department**

P.O. Box 589, Burlington Street East, Hamilton, Ontario, L8N 3L5.

Contact: D.R. Morton, Manager, Corporate, Professional and Regulatory Services, Tel: (416) 545-1121.

Personnel: Total is 90 of which 35 are scientists and engineers.

Activities: Formulation, process and package development for packaged consumer products, including foods, cleaning products, toiletries, drugs and paper products.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: english.

#### **PROLITE PLASTICS LTD**

7316 18th Street, Edmonton, Alberta, T6P 1N8.

##### **Research Unit**

Admin. Contact: Marianne Kaspe, R&D Co-ordinator,  
Tel: (403) 440-2310.

Scientific Contact: Paul Kaspe, Plant Manager,  
Tel: (403) 467-5310.

Personnel: Total is 4 of which none are scientists and engineers.

Activities: Developing better processes for manufacturing various thermoplastic fittings. This includes a now pending patent application for the manufacture of a 'Single Flare Flange Adapter' in Polyethylene, also developing a process for manufacturing same in Polybutylene. Currently commencing development on a new Tee procedure. New fusion techniques. Currently undertaking a feasibility study on 'Vacuum Impregnation Technique to the product of pipe fittings' - hence to go on to - transferring and implementing this technique into new technology in the shop.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: english.

#### **PROMAC CONTROLS INC**

1375 Morningside Avenue, Scarborough, Ontario, M1B 3C5.

#### **Promac Controls Inc, R&D Department**

Admin. Contact: H.J. Hansen, General Manager,  
Tel: (416) 284-8440.

Scientific Contact: D. Martin, Manager, R&D,  
Tel: (416) 284-8440.

Personnel: Total is 8 of which 5 are scientists and engineers.

Activities: Micro-processor controlled instrumentation; telemetry; digital and analog electronics; software for process control.

Facilities: 2 NOVA 4 computer systems; 3 micro-computer systems; logic analysers; oscilloscopes.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: english.

#### **PROTO MANUFACTURING LIMITED**

2145 Solar Crescent, Oldcastle, Ontario, N0R 1L0.

##### **Non-Destructive Test R&D Unit**

Admin. Contact: Erhard Brauss, President,  
Tel: (519) 737-6330.

Scientific Contact: Michael Brauss, R&D Manager,  
Tel: (519) 737-6330.

Personnel: Total is 7 of which 4 are scientists and engineers.

Activities: Prime Objective: research and development of the methodologies required to achieve 100% test automation in NDT applications. Areas of investigation: research on methodologies for weld integrity testing; system integration development; hardware interface development; part manipulation automation development; failsafe test methods research; feasibility and applications research; waveforms analysis up to 100Mhz; research on eddycurrent and ultrasonic applications ie. crack detection, hardness, structural integrity SPC system development.

Facilities: HP waveform analysis system; eddycurrent instrumentation; ultrasonic instrumentation.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.

Language(s) in Which Services are Provided: english.

##### **X-Ray Diffraction Unit**

2175 Solar Crescent, Oldcastle, Ontario, N0R 1L0.

Admin. Contact: Erhard Brauss, President,  
Tel: (519) 737-6330.

Scientific Contact: Michael Brauss, R&D Manager,  
Tel: (519) 737-6330.

Personnel: Total is 3 of which 3 are scientists and engineers.

Activities: Prime objective: research and development of portable X-Ray diffractometer for non-destructive residual stress measurement. Areas of investigation: position sensing technique R&D using lasers, ultrasonics; computer interfacing hardware development; computer software development; solid state X-ray detection research; signal processing/data collection development; weight reduction/optimization of electromechanical systems; development of precise electromechanical motion systems; residual stress measurement in crystalline materials.

Facilities: Proto X-ray diffractometer; controlled atmosphere test chamber with three stage thermoelectric cooler; IBM PC; techmet lasermike measurement system; canole data base link.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.

Language(s) in Which Services are Provided: english.

#### **PULP & PAPER RESEARCH INSTITUTE OF CANADA**

570 St. John's Boulevard, Pointe Claire, Québec, H9R 3J9.

##### **Research Unit**

Admin. Contact: Cyril D. Doucet, Vice-President

Administration, Tel: (514) 630-4100.

Scientific Contact: Dr. H.I. Bolker, Director of Research,  
Tel: (514) 630-4100.

Personnel: Total is 310 of which 120 are scientists and engineers.

Activities: Chemical pulping and bleaching; mechanical pulping; papermaking; materials development; environmental science; systems engineering; basic oriented research; technological forecasting; biotechnology.

Facilities: Papermaking machine; pilot calender machine; chemical pulping pilot plant; mechanical pulping pilot plant; experimental printing press.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.

Language(s) in Which Services are Provided: both english and french.

#### **PURE GREENS LTD.**

81 Ponderosa Crescent, London, Ontario, N6E 2L5.

##### **Research Unit**

5th Avenue at 12th Street, Vanastara, Ontario, N6E 2L5.

Contact: Mike Robertson, Owner, Tel: (519) 681-1628.

Personnel: Total is 1 of which 1 is a scientist or engineer.

Activities: Hydroponics - Vegetables, particularly lettuce. Artificial light culture of vegetables. Year round production of fresh vegetables and fruits.

Facilities: Greenhouses

Current or Potential Work Performed for: self or parent company, government.

Nature of Work Performed for Others: contract R&D, consultation.

Language(s) in Which Services are Provided: english.

#### **PYLON ELECTRONIC DEVELOPMENT COMPANY LTD.**

147 Colonnade Road, Nepean, Ontario, K2E 7L9.

##### **Research Unit**

Admin. Contact: John E. Pinnell, Chairman,

Tel: (613) 226-7920.

Scientific Contact: George Vandrish, Ph.D., Director of Research, Tel: (613) 226-7920.

Personnel: Total is 6 of which 4 are scientists and engineers.

Activities: RADON and THORON measurement technology; RADON daughter standards; development of health physics instrumentation; investigation of emanation efficiency of products of radium and thorium.

Facilities: Radiation chambers; low level chemical process chambers radium & Thorium.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D.

Language(s) in Which Services are Provided: english.

##### **Research Unit**

2300 Victoria Street, Lachine, Québec, H8S 1Z3.

Contact: Louis Mandel Ph.D, General Manager,

Tel: (514) 637-1186.

Personnel: Total is 9 of which 4 are scientists and engineers.

Activities: Uninterruptable power supplies; radio controlled load shedding for power utilities; power conversion equipment.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D.

Language(s) in Which Services are Provided: english.

#### **QIT-FER ET TITANE INC.**

770 Sherbrooke West, Montréal, Québec, H3A 1G1.

##### **QIT-Fer et Titane Research Department**

1625 Rte Marie-Victorin, Tracy, Québec, J3R 1M6.

Admin. Contact: H.Y. Lee, Technical Director,

Tel: (514) 742-6671.

Scientific Contact: A.E. Grau, Research Manager,

Tel: (514) 742-6671.

Personnel: Total is 79 of which 35 are scientists and engineers.

Activities: Pilot plant tests to ensure an adequate and consistant supply of raw materials for the Sorel smelter; investigations to improve the smelting, beneficiation and refining processes through a better understanding of the process metallurgy and operating variables; test work to maintain and increase the share of the market held by Sorelslag and Sorelmetal through technical service, the evaluation of competitive products and the improvement of existing products; studies related to the titania and the iron and steel industries to develop new processes and products.

Facilities: 150 KVA pilot smelting furnace; 300 lb and 100 lb induction furnaces; Astro high temperature furnaces (2); electron microscope; fully equipped metallurgical laboratory; X-ray diffraction and fluorescence.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: both english and french.

#### **QRL ANALYSIS CORPORATION**

Suite 100, 19 Grenfell Crescent, Nepean, Ontario, K2G 0G3.

##### **Research Unit**

Contact: R.F. Haythornthwaite, Vice President,

Tel: (613) 226-1885.

Personnel: Total is 3 of which 3 are scientists and engineers.

Activities: Development of methods of improving semiconductor reliability. Improved methods of materials analysis. Structures of thin layers of metals.

Facilities: Scanning Electron Microscope; X-ray microanalysis; Semiconductor Failure Analysis; Auger Analysis.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.

Language(s) in Which Services are Provided: english.

#### **QUADRO ENGINEERING INC**

613 Colby Drive, Waterloo, Ontario, N2V 1A1.

##### **Research Unit**

Contact: D.N. Lynch, Manager, Research Engineering,

Tel: (519) 884-9660.

Personnel: Total is 4 of which 2 are scientists and engineers.

Activities: Size reduction (comminution) of particulates for the food and pharmaceutical industry, wet or dry phase; solids handling and material preparation; solids mixing; process equipment design and development.

Facilities: COMIL Grinders, various sizes.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.  
Language(s) in Which Services are Provided: english.

#### **QUATIC CHEMICALS LIMITED**

61 Lewis Road, Guelph, Ontario, N1H 6M6.

##### **Laboratory Department**

Admin. Contact: Mr. Angelo Venerus, Vice-President,  
Tel: (519) 821-7780.

Scientific Contact: B.A. Zidovec, Laboratory Manager,  
Tel: (519) 821-7780.

Personnel: Total is 4 of which 4 are scientists and engineers.

Activities: Potable water treatments; waste water treatments.

Facilities: Spectrophotometers; corrosometers; dissolved oxygen meters; A.A.; G.C.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.

Language(s) in Which Services are Provided: english.

#### **QUEBEC METAL POWDERS LIMITED**

1655 Marie-Victorin Road, Tracy, Quebec, J3R 4R4.

##### **Research Unit**

Admin. Contact: Joseph M. Capus, Technical Director,  
Tel: (514) 742-5911.

Scientific Contact: Yves Trudel, Manager, R&D,  
Tel: (514) 742-5911.

Personnel: Total is 22 of which 9 are scientists and engineers.

Activities: Process and product development related to the manufacture and application of ferrous metal powders; powder metallurgy; testing and characterization of metal powders.

Facilities: Pilot plant facilities for manufacture of experimental metal powders.

Current or Potential Work Performed for: self or parent company, other clients.

Nature of Work Performed for Others: testing and analysis.

Language(s) in Which Services are Provided: both english and french.

#### **QUESTOR SURVEYS LTD.**

6380 Viscount Road, Mississauga, Ontario, L4V 1H3.

##### **Questor Research Division**

Contact: P.G. Lazenby, Chairman and Director of Research, Tel: (416) 676-9880.

Personnel: Total is 5 of which 3 are scientists and engineers.

Activities: Airborne exploration geophysics - fixed wing and helicopter; electromagnetics - time domain; magnetics - low sensitivity, high sensitivity, gradient; digital data processing; analog and mathematical modelling.

Facilities: DC-3 aircraft; high power pulse E.M. system; 11/73 computer.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: english.

#### **R.J. PICK LTD**

4 Spruce Lane, Elmira, Ontario, N3B 2Y7.

##### **Research Unit**

Contact: R. Pick, President, Tel: (519) 669-8055.

Personnel: Total is 1 of which 1 is a scientist or engineer.

Activities: Mechanical engineering: solid mechanics, stress, analysis, fatigue, fracture, finite element methods. Studies

include pipelines, welding, light railed vehicles, nuclear components, pressure vessels.

Current or Potential Work Performed for: government, other clients.

Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.

Language(s) in Which Services are Provided: english.

#### **Spicer Computer Developments Inc.**

279 Weber Street North, Unit 9, Waterloo, Ontario, N2J 3H8.

Contact: Steve Spicer, President, Tel: (519) 884-7242.

Personnel: Total is 3 of which 3 are scientists and engineers.

Activities: Computer graphics interfaces, hardware and software, custom software, graphics controllers.

Current or Potential Work Performed for: self or parent company, other clients.

Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.

Language(s) in Which Services are Provided: english.

#### **RAM INDUSTRIES LTD**

33 York Road East, Yorkton, Saskatchewan, S3N 2W1.

##### **Research & Development Department**

Admin. Contact: Mr. Al Gedcke, General Manager,  
Tel: (306) 783-8539.

Scientific Contact: Mr. David Lesanko, Engineer,  
Tel: (306) 783-8539.

Personnel: Total is 2 of which 1 is a scientist or engineer.

Activities: Research into the improvement and design of hydraulic cylinders and skid sten loaders.

Current or Potential Work Performed for: self or parent company, other clients.

Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.

Language(s) in Which Services are Provided: english.

#### **RAYLO CHEMICALS LTD.**

8045 Argyll Rd, Edmonton, Alberta, T6C 4A9.

##### **R&D Department**

Admin. Contact: Mr. J.F. Prescott, Ph.D., Technical Manager, Tel: (403) 468-6060.

Scientific Contact: Mr. W.H. Muhs, Ph.D., Manager; R&D,  
Tel: (403) 468-6060.

Personnel: Total is 12 of which 12 are scientists and engineers.

Activities: Chemical process development; chemical characterization and analysis; coal liquefaction; flocculation and flocculants; polymers and polymerization; high temperature resistant polymers; novel resins for composites; insect attractants (pheromones); biochemical intermediates; pharmaceutical intermediates.

Facilities: General purpose chemical pilot plant; supercritical gas technology.

Current or Potential Work Performed for: self or parent company, government.

Nature of Work Performed for Others: contract R&D.

Language(s) in Which Services are Provided: english.

#### **RCA INC.**

P.O. Box 161, Royal Bank Plaza, Toronto, Ontario, M5J 2J4.

##### **New Products Div., Photodetector Operations, R&D Department**

21001 Trans-Canada Highway, Ste-Anne-de-Bellevue, Québec, H9X 3L3.

Admin. Contact: Ronald Swarbrick, Manager, Marketing,  
Tel: (514) 457-9000.

Scientific Contact: Dr. Robert J. McIntyre, Manager,  
Research and Development, Tel: (514) 457-9000.  
Personnel: Total is 35 of which 20 are scientists and  
engineers.  
Activities: Solid state photodetectors - silicon PIN and  
avalanche photodetectors - InGaAs PIN and avalanche  
photodetectors. Detector modules (including hybrid  
wideband preamplifiers).  
Facilities: Complete line of equipment required for  
fabrication and testing of semiconductors and devices.  
Current or Potential Work Performed for: self or parent  
company, government, other clients.  
Nature of Work Performed for Others: contract R&D.  
Language(s) in Which Services are Provided: both english  
and french.

#### **RE/SPEC LTD.**

005-4616 Valiant Dr. N.W., Calgary, Alberta, T3A 0X9.

##### **Research Unit**

Contact: Hans Y. Tammemagi, President,  
Tel: (403) 288-7820.  
Personnel: Total is 6 of which 4 are scientists and  
engineers.  
Activities: Computer applications in mining, geotechnical  
and general engineering. In particular, development of  
analysis capabilities on microcomputers.  
Facilities: HP 9816 Microcomputer, Olivetti  
Microcomputer  
Current or Potential Work Performed for: self or parent  
company, government, other clients.  
Nature of Work Performed for Others: contract R&D,  
consultation, testing and analysis.  
Language(s) in Which Services are Provided: english.

#### **REICHHOLD LIMITED**

4 Robert Speck Parkway Ste 700, Mississauga, Ontario,  
L4Z 1S1.

##### **Reichhold Limited - Resin Division, Corporate Laboratory Headquarters**

1919 Wilson Avenue, Weston (Toronto), Ontario,  
M9M 1B1.  
Admin. Contact: Mrs. Diana King, Administrative  
Assistant, Tel: (416) 742-0262.  
Scientific Contact: D.M. Jenkins, Acting Technical Director,  
Tel: (416) 848-5540.  
Personnel: Total is 26 of which 24 are scientists and  
engineers.  
Activities: Synthesis of resins used in the coatings,  
adhesives and forest industries. Analysis of raw materials  
and processed materials. Investigating the replacement  
of fossil fuel byproducts by other means. Evaluating the  
results of different processing techniques for industry.  
Monitoring safety and hazardous conditions for all  
laboratories and work places.  
Current or Potential Work Performed for: self or parent  
company, other clients.  
Language(s) in Which Services are Provided: english.

#### **RELTEK INC**

44 Steacie Drive, Kanata, Ontario, K2K 2A9.

##### **Research Unit**

Contact: M. Sullivan, President, Tel: (613) 592-2411.  
Personnel: Total is 6 of which 3 are scientists and  
engineers.  
Activities: Development of custom electronic equipment  
(turnkey systems or components) for DEC oriented  
computers. Field of specialization is in data  
communications systems especially X.25.  
Facilities: Component test equipment; environmental  
equipment.

Current or Potential Work Performed for: self or parent  
company.  
Nature of Work Performed for Others: contract R&D.  
Language(s) in Which Services are Provided: english.

#### **RENALD CARRIERE AND ASSOCIATES INC**

6-1050 Baxter Road, Baxter Centre, Ottawa, Ontario,  
K2C 3P1.

##### **Survey Software Development**

Admin. Contact: Anna Matassa, Office Manager,  
Tel: (613) 820-4545.  
Scientific Contact: Paul Mrstik, Director, Operations,  
Tel: (613) 820-4545.  
Personnel: Total is 3 of which 2 are scientists and  
engineers.  
Activities: Video geographic information system  
development; advanced survey technology software  
development.  
Facilities: HP 1000 mini computer; COMPAQ PLUS  
micro computer; video system.  
Current or Potential Work Performed for: government,  
other clients.  
Nature of Work Performed for Others: contract R&D,  
consultation.  
Language(s) in Which Services are Provided: english.

#### **RESEARCH FOODS LIMITED - BIOTECHNOLOGY DIVISION**

77 Champagne Drive, Downsview, Ontario, M3J 2C6.

##### **CANPRO Laboratories**

Admin. Contact: O. Wald, Controller, Tel: (416) 635-8434.  
Scientific Contact: Dr. Gawhery, Research Director,  
Tel: (416) 635-8962.  
Personnel: Total is 40 of which 23 are scientists and  
engineers.  
Activities: Mycotoxins - isolation methods of identification  
of all types and manufacture of certain biological  
trichothecene compounds - Vomitoxin acetyl-vomitoxin  
etc and derivatives. Food processing methodology.  
Facilities: GC mass spectrophotometer; HPLC; GC.  
Current or Potential Work Performed for: self or parent  
company, government, other clients.  
Nature of Work Performed for Others: contract R&D,  
consultation, testing and analysis.  
Language(s) in Which Services are Provided: english.

#### **RICHARD BRANCKER RESEARCH LTD**

27 Monk Street, Ottawa, Ontario, K1S 3Y7.

##### **Research Unit**

Admin. Contact: Norma Eckford, Assistant Manager,  
Tel: (613) 233-1621.  
Scientific Contact: Richard Brancker, Manager,  
Tel: (613) 233-1621.  
Personnel: Total is 5 of which 3 are scientists and  
engineers.  
Activities: RMS measurement of RF noise; methods of  
monitoring radon gas; chlorophyll fluorescence induction.  
Facilities: Microprocessor development system; RF  
laboratory; digital laboratory; prototype PCB fabrication;  
Encapsulation; sheet metal and machine shop.  
Current or Potential Work Performed for: self or parent  
company, government, other clients.  
Nature of Work Performed for Others: contract R&D.  
Language(s) in Which Services are Provided: english.

#### **RIEDER DISTILLERY LTD**

297 South Service Rd, Grimsby, Ontario, L3M 4E9.

##### **Rieder Distillery, R&D Dept.**

Contact: Ludwig J. Babjak, M.A.Sc., P.Eng., Director of  
R&D, Tel: (416) 945-9225.

Personnel: Total is 5 of which 2 are scientists and engineers.

Activities: Extraction and purification of natural colours; extraction and purification of natural flavors; formulation of alcoholic and non-alcoholic beverages; utilization of byproducts from fruit and vegetable processing operations; production of natural flavors by bioconversion, production of essential fatty acids by bioconversion.

Facilities: Counter-current extractor; vacuum still; desulfurization column; ultrafiltration, reverse osmosis; absorption chromatography column; gas-liquid chromatograph; subcritical carbon dioxide extractor; magnoform fermentor.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: english.

#### **RIO ALGOM LTD**

Box 1500, Elliot Lake, Ontario, P5A 2K1.

**Rio Algom Ltd., Process Development Dept.**

Admin. Contact: K.R. Kav, Manager, Tel: (705) 461-2594.

Scientific Contact: E. Barnes, Superintendent,  
Tel: (705) 461-4455.

Personnel: Total is 24 of which 6 are scientists and engineers.

Activities: Major - Hydrometallurgy as particularly applied to uranium, copper and tin recovery. - Tailings management and effluent treatment for uranium operations. - Mineral processing techniques and equipment.

Facilities: Solvent Extraction Units; Ion Exchange pilot columns; Flotation Cells; General mineral processing equip; Sampling, Grinding Screening ; Full analytical facilities (incl. S-R-F, A.A., Emission spec. etc.);

Current or Potential Work Performed for: self or parent company, other clients.

Nature of Work Performed for Others: testing and analysis.

Language(s) in Which Services are Provided: english.

#### **RISTEEN ASSOCIATES LTD**

120 Smythe Street, Fredericton, NB, E3B 3C4.

**Research Unit**

Contact: F.C. Risteen, President, Tel: (506) 454-3675.

Personnel: Total is 1 of which 1 is a scientist or engineer.

Activities: Remote piloted aircraft development in under 100 pound gross weight; under 30 horsepower engines. Hydraulic power orthotic devices and manipulators for special applications requiring very high force to dead weight ratios ie. 5 lb. arm lifting 100 lbs. load with good spatial resolution and good rate control.

Facilities: Machine shop facilities; remote control equipment.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation.

Language(s) in Which Services are Provided: english.

#### **RITE WAY MANUFACTURING CO LTD**

1891 Albert Street North, Regina, Saskatchewan, S4P 3H1.

**Research Unit**

Admin. Contact: Mr. Leslie Hulicsko, President,  
Tel: (306) 543-6777.

Scientific Contact: Mr. Brent Sattler, Engineer,  
Tel: (306) 543-6777.

Personnel: Total is 5 of which 3 are scientists and engineers.

Activities: Design farm and industrial equipment.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, testing and analysis.

Language(s) in Which Services are Provided: english.

#### **ROBERTS-GORDON CANADA INC**

241 South Service Road West, Grimsby, Ontario, L3M 1Y7.

**Research Unit**

Admin. Contact: R.G. Smith, Vice-President & Acting General Manager, Tel: (416) 945-5403.

Scientific Contact: Norman M. Smith, Chief Technologist,  
Tel: (416) 945-5403.

Personnel: Total is 3 of which 2 are scientists and engineers.

Activities: The R&D performed is of a specialized nature for the residential and commercial gas heating market. The R&D is of a continuous nature as more efficient and innovative systems are investigated.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: english.

#### **ROBIN HOOD MULTIFOODS INC.**

243 Consumers Road, Willowdale, Ontario, M2J 4W8.

**Robin Hood Multifoods Inc. - Technical Centre**

Unit 4, 191 Attwell Drive, Rexdale, Ontario, M9W 5Z2.

Contact: M.W. O'Connor, Vice-President, Technical Director, Tel: (416) 675-6139.

Personnel: Total is 16 of which 10 are scientists and engineers.

Activities: Development of new products for operating divisions of the company (glass goods, specialty meats, dry grocery, flour, bakery mixes, agriculture products and away from home eating); investigation of potential new technologies for existing and new product areas; process and product improvement studies; analytical and microbiological method development; special studies to maintain product quality and competitive position in the market place.

Facilities: Wheat milling, baking laboratory; pilot bakery; liquid processing pilot equipment; GC, NIR, spectrophotometer and other specialized analytical and microbiological equipment.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: both english and french.

#### **ROCTEST LTD/LTEE**

665 Pine, St-Lambert, Québec, J4P 2P4.

**Research Unit**

Admin. Contact: Denis Marcil, Président,  
Tel: (514) 465-1113.

Scientific Contact: J.F. Capelle, Vice-président,  
Tel: (514) 465-1113.

Personnel: Total is 5 of which 2 are scientists and engineers.

Activities: Development of new measuring instruments in the geotechnical and structural field.

Facilities: Test tank (1,000 psi); various testing benches.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, testing and analysis.

Language(s) in Which Services are Provided: both english and french.

Note: Descriptive text has been translated from French.

**ROSS PULP & PAPER INC**

304 St. Patrick Street, Lasalle, Quebec, H8N 2H1.

**Research Unit**

Admin. Contact: Zoltan Beke, Director of Eng,

Tel: (514) 366-5160.

Scientific Contact: Ralph Mancini, Technical Manager,

Tel: (514) 366-5160.

Personnel: Total is 6 of which 5 are scientists and engineers.

Activities: R&D directed toward development of drying and heat exchange process equipment specifically for application in the pulp and paper industry.

Facilities: Yankee dryer test bed; pulp dryer test bed; heat exchanger test bed

Current or Potential Work Performed for: self or parent company, other clients.

Nature of Work Performed for Others: consultation, testing and analysis.

Language(s) in Which Services are Provided: both english and french.

**ROUSSEAU METAL INC.**

105 Ouest Avenue de Gaspé, St-Jean Port-Joli, Québec, G0R 3G0.

**Service technique**

Admin. Contact: Simon Pierre Paré, Directeur général,

Tel: (418) 598-3381.

Scientific Contact: François Rousseau, Responsable des services techniques, Tel: (418) 598-3381.

Personnel: Total is 3 of which 2 are scientists and engineers.

Activities: Research and development of production methods with a view to automation; product research and design for autonomous production.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: both english and french.

Note: Descriptive text has been translated from French.

**ROY BALL ASSOCIATES LIMITED**

1750 Courtwood Crescent, Suite 300, Ottawa, Ontario, K2C 2B5.

**Research Unit**

Contact: John Amyot, Director, Marketing & Research,

Tel: (613) 226-7890.

Personnel: Total is 35 of which 30 are scientists and engineers.

Activities: Data acquisition & control; Image processing; Signal processing; Pattern recognition.

Current or Potential Work Performed for: self or parent company, government.

Nature of Work Performed for Others: contract R&D, consultation.

Language(s) in Which Services are Provided: english.

**RUMBLE EQUIPMENT LTD**

25 Baywood Road, Rexdale, Ontario, M9V 3Y8.

**Electronic Development Group (Adjustable Frequency Development)**

Admin. Contact: Mr. David L. Duff, Mgr; Controls Division, Tel: (416) 743-8711.

Scientific Contact: Mr. Boris Mokrytzki, Mgr; Development, Tel: (416) 743-8711.

Personnel: Total is 6 of which 3 are scientists and engineers.

Activities: This facility is organized to support production of advanced solid state power control systems primarily for adjustable speed drives; The experience of individual engineers has produced adjustable frequency inverters to powers of 1000 HP for industrial and transportation

projects; a particular area of experience is the application of high power thyristors and transistors.

Facilities: Motor and drive electrical test facilities.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.

Language(s) in Which Services are Provided: english.

**RUSSELL ULTRA SOUND SERVICES**

4909 75th Avenue, Edmonton, Alberta, T6B 2S3.

**Cyberscope Industries Inc**

4906 75th Avenue, Edmonton, Alberta, T6B 2S3.

Admin. Contact: D. Russell, President,

Tel: (403) 468-2023.

Scientific Contact: K. Radesh, Electronics Engineer,

Tel: (403) 468-2023.

Personnel: Total is 8 of which 6 are scientists and engineers.

Activities: Development of electronic instruments for the performance of non-destructive testing, using primarily electro-magnetic techniques. Currently our research centres around eddy-current testing of magnetic materials. We are able to custom design, instruments for all sorts of non-destructive test techniques.

Facilities: 3-D ultra-sonic immersion tank; H.P. 41CX & I.B. 3478A.c/w 55 MB memory; machine shop equip; 3561A Dynamic signal ana.; EGG lockin ana.; Digidyne Eprom Programmer

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.

Language(s) in Which Services are Provided: english.

**S & J ENGINEERING INC**

Unit 8, 34 Golden Gate Court, Scarborough, Ontario, M1P 4M8.

**Research Unit**

403 Wellesley Street East, Toronto, Ontario, M4X 1H5.

Contact: David F. James, President, Tel: (416) 978-4585.

Personnel: Total is 3 of which 3 are scientists and engineers.

Activities: Fluid flow research, measurement, metering and testing; design, fabrication of Laser-Doppler Velocimeter systems; non-newtonian fluid flow, particularly polymer solutions and liquid-gas mixtures; development of custom electro-mechanical systems.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.

Language(s) in Which Services are Provided: english.

**S.C. JOHNSON AND SON LIMITED**

1 Webster Street, Brantford, Ontario, N3T 5R1.

**R&D Division, S.C. Johnson and Son Limited**

Contact: Dr. Peter Nott, Vice President - Research & Development, Tel: (519) 756-7900.

Personnel: Total is 12 of which 8 are scientists and engineers.

Activities: Development of chemical speciality products for consumer and industrial markets, including cleaners, floor polishes, furniture polishes, disinfectants, insecticides, airfresheners, etc. Development of personal care products, including hair shampoos, hair conditioners, skin lotions and other cosmetics. Development of coatings materials, including polymers for graphic arts industry, paper coatings polymers, etc.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: english.

#### **S.L. ROSS ENVIRONMENTAL RESEARCH LIMITED**

346 Frank Street, Ottawa, Ontario, K2P 0Y1.

##### **Research Unit**

Contact: S.L. Ross, President, Tel: (613) 232-1564.

Personnel: Total is 7 of which 5 are scientists and engineers.

Activities: R&D of equipment for the clean-up of oil spills and chemical spills. Research and modelling of the behaviour and fate of oil and chemical spills. Development of training programs for oil/chemical spill response. Research on the environmental impacts of accidental spills of oil/chemicals. Development of ecotoxicological testing methods for aquatic systems. Environmental properties of offshore crude oils. Risk analysis with respect to environmental emergencies. R&D of chemical treating agents for oil/chemical spills. R&D of combustion systems for controlling oil spills. R&D on the behaviour, fate and control of Arctic oil spills.

Facilities: Wind/WAVE tank facility for oil studies; Oil well blowout simulator; Oil Spill Dispersant Testing Apparatus; Computer Data Acquisition and Analysis System. Automated Particle Size Analyser. Petroleum Analysis Equipment.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.

Language(s) in Which Services are Provided: english.

#### **S.T. RESEARCH LTD.**

11-2655 Blackwell St., Ottawa, Ontario, K1B 4E4.

##### **Research Unit**

Admin. Contact: Earle B. Ingalls, President,

Tel: (613) 749-1901.

Scientific Contact: John F. Ohrt, Tech. Director,

Tel: (613) 749-1901.

Personnel: Total is 7 of which 4 are scientists and engineers.

Activities: Electronics: Spec communications; Electronic warfare; Microwaves; Digital electronics; Software.

Facilities: Computer; Electronic Test and Measuring Equipment.

Current or Potential Work Performed for: self or parent company, government.

Nature of Work Performed for Others: contract R&D, testing and analysis.

Language(s) in Which Services are Provided: english.

#### **SAB NIFE CORPORATION**

125 Nantucket Blvd., Scarborough, Ontario, M1P 2N8.

##### **Research Unit**

125 Nantucket Blvd, Scarborough, Ontario, M1P 2N8.

Admin. Contact: Mr. Paul Bailie, Controller,

Tel: (416) 757-5151.

Scientific Contact: Des Faria, Director of Engineering,

Tel: (416) 757-5151.

Personnel: Total is 3 of which 3 are scientists and engineers.

Activities: DC-AC Power Conversion to 200 KVA; AC-AC Power Conditioning to 750 KVA; AC-DC Power Conversion to 500 KVA.

Current or Potential Work Performed for: self or parent company, other clients.

Language(s) in Which Services are Provided: english.

#### **SAFENG SERVICES & TECHNOLOGIES LTEE**

12201 Letellier, Montréal, Québec, H3M 2Z9.

#### **Rayonnement Electromagnétique**

Contact: F. Dawalibi, Directeur, Tel: (514) 336-2511.

Personnel: Total is 3 of which 2 are scientists and engineers.

Activities: Theoretical and experimental studies on electromagnetic fields generated by electrical conductors buried in dissipative earth; Specialization: electrical energy and networks; low-frequency communication; and detection and localization of electrical conductors; development of specialized software for the analysis of problems related to the above-mentioned studies.

Facilities: Reduced simulation model with automatic data acquisition; computer; peripheral devices and various measuring instruments.

Current or Potential Work Performed for: self or parent company, other clients.

Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.

Language(s) in Which Services are Provided: both english and french.

Note: Descriptive text has been translated from French.

#### **SAFER AGRO-CHEM LTD**

6761 Kirkpatrick Cr., R.R. #3, Victoria, B.C., V8X 3X1.

##### **Safer Ltd**

Contact: Dr. G.S. Puritch, V-President, Research and Development, Tel: (604) 652-4426.

Personnel: Total is 18 of which 18 are scientists and engineers.

Activities: Research and development of natural plant and animal oil constituents as pest control products. Research on biological control agents including bacteria, viruses and fungi.

Facilities: Gas-liquid chromatograph

Language(s) in Which Services are Provided: english.

#### **SAINT-LAWRENCE CEMENT INC**

2nd Floor, 1945 Graham Boulevard, Mont-Royal, Québec, H3R 1H1.

##### **Ciment Independant Inc.**

C.P. 480, 966 chemin des Prairies, Joliette, Québec, J6E 6H7.

Admin. Contact: Mr. Henry-Paul Valliere, General Director, Tel: (514) 878-4421.

Scientific Contact: R. Morin, Chief Chemist, Tel: (514) 878-4421.

Personnel: Total is 3 of which 2 are scientists and engineers.

Activities: This unit utilizes physical and chemical laboratories for testing of cement and concrete. These facilities are also used for innovations in cement production and quality. In parallel, the concrete laboratory is used for performance evaluation of concretes containing different admixtures for improvement in concrete strength, durability, architectural aspect, facility of use etc.

Facilities: Hydraulic press 0-500,000 lbs.; atomic absorption spectrometer; X-Ray fluorescence spectrometer.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: french.

##### **Research Unit**

2391 Lakeshore Road West, Mississauga, Ontario, L5J 1K1.

Admin. Contact: Mr. William G. Watts, Vice President of Marketing, Tel: (416) 822-1653.

Scientific Contact: L. Zimmerman, Chief Chemist, Tel: (416) 822-1653.

Personnel: Total is 2 of which 1 is a scientist or engineer.

Activities: This unit utilizes physical and chemical laboratories for testing of cement and concrete. These facilities are also used for innovations in cement production and quality. In parallel, the concrete laboratory is used for performance evaluation of concretes containing different admixtures for improvement in concrete strength, durability, architectural aspect, facility of use etc.

Facilities: Perkin Aylmer 460 Atomic Abs.; X-Ray fluorescence spectrometer; Tinius-Olsen hydraulic press — 250,000.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: english.

#### **Ciment Saint-Laurent Inc.**

C.P. 1156, 1300 boulevard Ste-Anne, Beauport, Québec, G1K 7C9.

Admin. Contact: Mr. Georges Lachance, Secretary,  
Tel: (418) 663-7831.

Scientific Contact: G. Bussièrès, Chief Chemist,  
Tel: (418) 663-7831.

Personnel: Total is 1 of which 1 is a scientist or engineer.

Activities: This unit utilizes physical and chemical laboratories for testing of cement and concrete. These facilities are also used for innovations in cement production and quality. In parallel, the concrete laboratory is used for performance evaluation of concretes containing different admixtures for improvement in concrete strength, durability, architectural aspect, facility of use etc.

Facilities: Hydraulic Press 0-300,000 lbs.; Perkin Aylmer 460 Atomic Abs; Philipps PW-1212 X-Ray Fluorescence.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: french.

#### **SANDER GEOPHYSICS LTD**

303 Legget Drive, Kanata, Ontario, K2K 2B1.

##### **Research Unit**

Contact: Dr. George W. Sander, President,  
Tel: (613) 592-1301.

Personnel: Total is 26 of which 8 are scientists and engineers.

Activities: Development of instrumentation and methods for geophysical surveys (airborne) related to magnetometer surveys, radiation surveys, electrical surveys, development of digital data acquisition systems for such surveys.

Facilities: Electronic laboratory; computing centre; test aircraft.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: testing and analysis.

Language(s) in Which Services are Provided: both english and french.

#### **SANDOZ ANCA**

111 Consumers Drive, Whitby, Ontario, L1N 5Z5.

##### **Research Unit**

Admin. Contact: Rocco Dinoi, Manufacturing Manager,  
Tel: (416) 668-3368.

Scientific Contact: Henry Gan, R&D Manager,  
Tel: (416) 668-3368.

Personnel: Total is 3 of which 3 are scientists and engineers.

Activities: Pharmaceutical R&D

Facilities: Chemical Laboratory (fully instrumented);

Powder mixers and granulators; Fluid Bed and Tray Dryers; Compressing machines; Encapsulating and Pouche filling equipment; Coating & Liquids Equipment. Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.

Language(s) in Which Services are Provided: english.

#### **SANDOZ CANADA INC**

385 Boulevard Bouchard, Dorval, Québec, H9S 1A9.

##### **Clinical Research Department**

385 boul Bouchard, Dorval, Quebec, H9S 1A9.

Contact: Dr. Jean-Paul St-Pierre, Director, Clinical Research, Tel: (514) 631-6775.

Personnel: Total is 11 of which 8 are scientists and engineers.

Activities: Clinical Research - Conducting clinical studies for the evaluation of drugs from a clinical and scientific prospective.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: both english and french.

#### **SANDWELL SWAN WOOSTER INC.**

1190 Hornby Street, Vancouver, British Columbia, V6Z 2H6.

##### **Research Unit**

Admin. Contact: J.P. Dickinson, Manager of Human Resources, Tel: (416) 671-2606.

Scientific Contact: Stephen L. Hodd, Vice-President,  
Tel: (416) 671-2606.

Personnel: Total is 12 of which 6 are scientists and engineers.

Activities: Coal Conversion Technology: coal liquefaction; bitumen/coal processing; bitumen upgrading. Liquid Separation Research: deashing coal liquids; dedusing shale oil. Alternative Fuels Research.

Facilities: Coal Liquefaction PDU; Autoclave System; Prototype Centrax Separator.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, testing and analysis.

Language(s) in Which Services are Provided: english.

#### **SANGAMO CANADA (DIVISION OF SCHLUMBERGER CANADA LIMITED)**

215 Laird Drive, Toronto, Ontario, M4G 3X1.

##### **Sangamo Canada**

Contact: M. Turc, Director of Engineering,  
Tel: (416) 425-3330.

Personnel: Total is 18 of which 6 are scientists and engineers.

Activities: Research and development in the following fields - electrical energy measuring and recording products, low and medium voltage instrument transformers up to 25kV., microcomputer controlled test equipment for electric utilities.

Facilities: Biddle partial discharge measurement equipment; Knopp ratio and phase angle test equipment; Jodice distance relay test equipment; uP development systems; H.V. impulse test equipment up to 250kV; secondary standards electrical laboratory.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: english.

#### **SAR ENGINEERING**

3683 West 4th Avenue, Vancouver, B.C., V6R 1P2.

#### Research Unit

Contact: Ken Cooper, Partner, Tel: (604) 733-5631.

Personnel: Total is 3 of which 1 is a scientist or engineer.

Activities: Energy use analysis, including computer thermal simulation, for residential, commercial, institutional and industrial buildings. Monitoring of the thermal performance of conventional and passive solar space and water heating systems. Computer simulation and physical modelling of daylighting in commercial and institutional buildings. Technology transfer of building science to the building industry. Database programming.

Facilities: One IBM PC computer; fan door for building de-pressurization tests; two Campbell scientific data loggers; anemometer; one Compaq microcomputer.

Current or Potential Work Performed for: government, other clients.

Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.

Language(s) in Which Services are Provided: english.

#### SASKATCHEWAN MINERALS

P.O. Box 120, Chaplin, Saskatchewan, S0H 0V0.

##### Research and Engineering Department

Contact: Gordon F. Miller, Director, Research and Engineering, Tel: (306) 395-2561.

Personnel: Total is 7 of which 3 are scientists and engineers.

Activities: We engage almost completely in practical research devoted to enhance the quality of our products in sodium sulfate and peat moss and to reduce the costs of production. Major improvements to equipment and expansions of facilities are handled by the same group.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: english.

#### SASKATCHEWAN POWER CORPORATION

2025 Victoria Avenue, Regina, Saskatchewan, S4P 0S1.

##### Saskatchewan Power Corporation - Research and Development Centre

Admin. Contact: Gerry Argue, Administration Manager, Tel: (306) 566-2278.

Scientific Contact: Dr. Michael Weekes, Acting Director, Tel: (306) 566-2273.

Personnel: Total is 40 of which 23 are scientists and engineers.

Activities: Electrical power generation, transmission and distribution; natural gas production, transmission and distribution; advanced energy conversion; renewable resources; Resource development; energy utilization.

Facilities: Metallurgical laboratory; chemical laboratory; mechanical test laboratory; electronics laboratory; computer laboratory; high voltage test laboratory; combustion laboratory; coal gasification testing facility; electrical test facilities.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.

Language(s) in Which Services are Provided: english.

#### SASKATCHEWAN WHEAT POOL PRODUCT DEVELOPMENT, FARM SERVICE DIVISION

2625 Victoria Ave, Regina, Saskatchewan, S4P 2Y6.

##### Product Development Branch

Contact: Mr. R.E. Morgan, Manager, Tel: (306) 569-4445.

Personnel: Total is 17 of which 7 are scientists and engineers.

Activities: Plant breeding; agronomy; chemical evaluation.

Facilities: Plot equipment; growth chambers.

Current or Potential Work Performed for: self or parent company, other clients.

Nature of Work Performed for Others: contract R&D, testing and analysis.

Language(s) in Which Services are Provided: english.

#### SATEL CONSULTANTS LIMITED

2609 Fenton Road, Ottawa, Ontario, K1G 3N3.

##### Research Unit

Contact: B.F. Murphy, P.Eng., President,

Tel: (613) 822-1166.

Personnel: Total is 6 of which 3 are scientists and engineers.

Activities: Satellite system design (2-12 GHz); satellite receiver design TV and radio (4 GHz); satellite receiver design data (4 GHz); TV/radio modulator design; antenna tracking drive design (1-3.7M).

Facilities: Microwave test equipment; satellite antennas 1-3M.

Current or Potential Work Performed for: self or parent company, other clients.

Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.

Language(s) in Which Services are Provided: english.

#### SCANADA CONSULTANTS LIMITED

436 MacLaren Street, Ottawa, Ontario, K2P 0M8.

##### Research Unit

Admin. Contact: Mrs. S. Murphy, Office Manager,

Tel: (613) 236-7179.

Scientific Contact: R.E. Platts, President,

Tel: (613) 236-7179.

Personnel: Total is 8 of which 5 are scientists and engineers.

Activities: Building physics; energy use and conservation in buildings; renewable energy; computer modelling.

Facilities: Fans for airtightness testing; optical fibrescope; psychrometers; moisture meters; data loggers.

Current or Potential Work Performed for: government, other clients.

Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.

Language(s) in Which Services are Provided: both english and french.

##### Research Unit

446 Reynolds Street, Oakville, Ontario, L6J 3M4.

Contact: C.E. Bonnyman, Vice-President,

Tel: (416) 842-3633.

Personnel: Total is 8 of which 3 are scientists and engineers.

Activities: Building physics; energy use and conservation in buildings; renewable energy.

Facilities: Fans for airtightness testing; infra-red thermography equipment (AGA); psychrometers; optical fibrescope; moisture meters.

Current or Potential Work Performed for: government, other clients.

Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.

Language(s) in Which Services are Provided: both english and french.

#### SCANTECH ELECTRONICS INC

Unit 5, 1707 Sismet Road, Mississauga, Ontario, L4W 2K8.

##### Research Unit

Admin. Contact: M.J. Prittie, President,

Tel: (416) 625-1844.

Scientific Contact: J.C. Kirk, Engineering Manager,

Tel: (416) 625-1844.

Personnel: Total is 2 of which 1 is a scientist or engineer.  
Activities: Opto-electronics; microprocessor based machine control systems.  
Current or Potential Work Performed for: self or parent company, other clients.  
Nature of Work Performed for Others: contract R&D.  
Language(s) in Which Services are Provided: english.

#### **SCHENECTADY CHEMICALS CANADA, LIMITED**

319 Comstock Road, Scarborough, Ontario, M1L 2H3.

##### **R&D Department**

Admin. Contact: J. Densmore, Comptroller,  
Tel: (416) 757-5136.  
Scientific Contact: E.L. Humburger, Director of R&D,  
Tel: (416) 757-5136.  
Personnel: Total is 5 of which 4 are scientists and engineers.  
Activities: Research and development work on synthetic resins and magnet wire coatings: alkyd resins for paints and printing inks; polyester resins for coatings; phenolic resins for coatings, brake-linings, foams, adhesives, etc.; polyurethane resins for coatings and adhesives; polyamide resins for printing inks; oleo-resinous varnishes for coatings and printing inks; rosin modified phenolics and rosin/maleics for coatings and printing inks; electrical insulating varnishes; electrical magnet wire coatings - ester-imides, polyesters, polyurethanes, polyvinyl-formal types, nylon based enamels, bond-coates.  
Facilities: Infra-red spectro-photometer; computer; gas-chromatograph.  
Current or Potential Work Performed for: self or parent company, other clients.  
Nature of Work Performed for Others: consultation.  
Language(s) in Which Services are Provided: english.

#### **SCHLEGEL CANADA INC.**

514 South Service Rd, Oakville, Ontario, L6J 5A2.

##### **Schlegel Canada Inc., Research & Development**

Contact: Helmut Hock, R&D Manager,  
Tel: (416) 845-6657.  
Personnel: Total is 4 of which 2 are scientists and engineers.  
Activities: Plastics: Evaluation and testing of purchased and in-house compounded materials and products; Formulate and Compound; Product Design; Manufacturing Equipment Concept Design; Textile: Weaving techniques; Product design; General: Info gathering of adhesives, plastics, composites, new processes.  
Facilities: Usually use custom designed and built testing equipment.  
Current or Potential Work Performed for: self or parent company.  
Language(s) in Which Services are Provided: english.

#### **SCHURMANN MACHINERY CO. LTD. (THE)**

43 Fima Crescent, Toronto, Ontario, M8W 3R1.

##### **Research Unit**

Contact: Mr. Peter Schurmann, President,  
Tel: (416) 259-2488.  
Personnel: Total is 5 of which 2 are scientists and engineers.  
Activities: Near net shape massive cold and warm flow forming (grainflow controlled), of low and highly alloyed ferrous and non-ferrous materials: for automotive - connecting rod caps; connecting rods; gears; variable ratio steering racks. for aircraft - vanes. for medical - stainless steel body implants; hip-bones; surgical instruments. Controlled high density compaction of

ferrous and non-ferrous materials; grain-flow controlled hobbing of low and highly alloyed die-steels.  
Facilities: Four hydraulic presses with grain-flow controllability from 630 tons to 2,500 tons.  
Current or Potential Work Performed for: self or parent company, government, other clients.  
Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.  
Language(s) in Which Services are Provided: english.

#### **SCI-TEC INSTRUMENTS INC.**

1526 Fletcher Road, Saskatoon, Saskatchewan, S7M 5M1.

##### **Research Unit**

Admin. Contact: K. Lamp, Vice-President of Operations,  
Tel: (306) 934-0101.  
Scientific Contact: W.S.C. Brooks, Manager of R&D,  
Tel: (306) 934-0101.  
Personnel: Total is 7 of which 7 are scientists and engineers.  
Activities: R&D into the measurement of physical parameters important to a variety of scientific and industrial users. Our instrumentation is microprocessor based and a majority is computer controlled. Current fields of specialization: Measurement of atmospheric pollutants and microprocessor based instruments for the oil and transport industries.  
Current or Potential Work Performed for: self or parent company, other clients.  
Nature of Work Performed for Others: contract R&D.  
Language(s) in Which Services are Provided: english.

#### **SCIENTIFIC SOFTWARE - INTERCOMP**

1100-603 7th Avenue South West, Calgary, Alberta, T2P 2T5.

##### **R&D Division**

Admin. Contact: David Gallagher, Controller,  
Tel: (403) 264-7205.  
Scientific Contact: Tom Gould, Vice President - R&D,  
Tel: (403) 264-7205.  
Personnel: Total is 3 of which 3 are scientists and engineers.  
Activities: Software development for use in the oil and gas industry by engineers and geologists.  
Facilities: Hardware supplied by HP, Apollo.  
Current or Potential Work Performed for: self or parent company.  
Nature of Work Performed for Others: consultation.  
Language(s) in Which Services are Provided: english.

#### **SCIEX - A DIVISION OF MDS HEALTH GROUP LIMITED**

55 Glen Cameron Road, Thornhill, Ontario, L3T 1P2.

##### **Research Unit**

Admin. Contact: William M. Robbins, Vice-President, Finance and Corporate Development,  
Tel: (416) 881-4646.  
Scientific Contact: William R. Davidson, Director, Research & Development, Tel: (416) 881-4646.  
Personnel: Total is 18 of which 14 are scientists and engineers.  
Activities: SCIEX is a Canadian company involved in the design, development, manufacture and marketing of mass spectrometer based products for trace organic and inorganic analysis; new product development of instrumentation for trace elemental and isotopic analysis, tandem mass spectrometry (MS/MS), inductively coupled plasma/mass spectrometry (ICP/MS); additions and modifications to existing instrumentation (TAGA 6000E MS/MS, ELAN 250 ICP/MS); development of the AROMIC Cargo Examination System: an advanced vapour detector used in surveillance systems; the

AROMIC system will be used to detect and identify, without manual inspection, minimal quantities of commonly smuggled substances such as explosives, drugs and alcohols. Contract R&D intrace analysis in fields including and as diverse as environmental sciences, biomedical, semi-conductor, polymer characterization, geological, nuclear studies, metallurgy, geochemistry, nutrition.

Facilities: ELAN 250 ICP/MS; TAGA 6000E MS/MS; AROMIC Cargo Examination System.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.

Language(s) in Which Services are Provided: english.

#### SCINTREX LIMITED

222 Snidercroft Road, Concord, Ontario, L4K 1B5.

##### Scintrex, R&D Laboratories

Admin. Contact: G. Stork, Vice President,  
Tel: (416) 669-2280.

Scientific Contact: Dr. H.O. Seigel, President,  
Tel: (416) 669-2280.

Personnel: Total is 32 of which 12 are scientists and engineers.

Activities: Status monitoring and control systems, utilising state-of-the-art electronic and man-machine interface techniques; specialization: Marine; offshore and naval damage control systems.

Facilities: HP-64000 Emulator.

Current or Potential Work Performed for: self or parent company, government.

Nature of Work Performed for Others: contract R&D.

Language(s) in Which Services are Provided: both english and french.

#### SCOTIA LIQUICOAL LIMITED

PO Box 1074, Halifax, Nova Scotia, B3J 2X1.

##### Research Unit

Contact: K. Burrill, Vice-President - General Manager,  
Tel: (902) 425-8430.

Personnel: Total is 6 of which 3 are scientists and engineers.

Activities: Preparation and use of coal liquid mixture fuels. Beneficiation of coals using spherical agglomeration methods. Treatment of fine coal waste streams. Recirculation testing of fuel train components, including atomizer nozzles. Combustion demonstrations.

Facilities: 5 ton/hr coal preparation pilot plant; mobile fuel handling system; recirculation test facility; laboratory.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.

Language(s) in Which Services are Provided: both english and french.

#### SEA-MET SCIENCES LTD.

36 Avenue Rd, Ottawa, Ontario, K1S 0N9.

##### Research Unit

Contact: T.M. Dauphinee, Pres., Tel: (613) 232-9957.

Personnel: Total is 1 of which 1 is a scientist or engineer.

Activities: Development of instrumentation for oceanography and meteorology, particularly concepts and design. Design of aids for the physically handicapped and prototype construction. Consultation on design of new instruments by others.

Current or Potential Work Performed for: government, other clients.

Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.

Language(s) in Which Services are Provided: english.

#### SEAKEM OCEANOGRAPHY LTD.

P.O. Box 2219, 2045 Mills Road, Sidney, British Columbia, V8L 3S1.

##### Research Unit

Admin. Contact: Andrew Wood, General Manager,  
Tel: (604) 656-0881.

Scientific Contact: David J. Thomas, President,  
Tel: (604) 656-0881.

Personnel: Total is 30 of which 20 are scientists and engineers.

Activities: Marine Chemistry - development of new sampling methods, development of new organic and inorganic chemical procedures; Biotechnology - development of histopathological procedures; Physical Oceanography - development of new data transmission from field instruments to ship or shore receiving stations.

Facilities: Gas chromatography Mass Spectrometer; Gas chromatographs; Atomic Absorption Spectrophotometer, Optical microphotograph equipment; PDP 11/34 Computer; Telemetry transmission equipment.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.

Language(s) in Which Services are Provided: english.

#### SEASTAR INSTRUMENTS LTD

2045 Mills Road, P.O. Box 2430, Sidney, British Columbia, V8L 3S1.

##### Scientific Instrument Development

Contact: Peter G. Berrang, President, Tel: (604) 656-0891.

Personnel: Total is 8 of which 8 are scientists and engineers.

Activities: Laser Optics Division - development of various laser optic and fibre optic sensors. Acoustics Division - development of various acoustic transmission devices. Ultra-Pure Chemicals Division - preparation of ultra-pure mineral acids. Chemical Sensor Division - development of fibre optic and other chemical sensors for use in marine waters.

Facilities: Shielded, vibration-free optics room; class-100 clean rooms (2); various electronics test equipment; logic state analyzer; calibration hydrophone and accessory equipment; high precision pressure calibration facility; single mode fibre optic fusion splicer.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D.

Language(s) in Which Services are Provided: english.

#### SEATECH INVESTIGATION SERVICES LIMITED

1127 Barrington Street, Suite 17, Halifax, Nova Scotia, B3J 3C4.

##### Research Unit

Contact: Mr. Clive MacGregor, President,  
Tel: (902) 423-5296.

Personnel: Total is 7 of which 7 are scientists and engineers.

Activities: Hazardous materials: analyses, particularly organohalogenes; toxicity testing, primarily daphnia. Gas analyses: detection trace levels contaminants; rebreather system research. Fuels: analysis composition; use of biocides in fuels. Biology: pathogens in biota.

Facilities: Gas Chromatographs (3); UV-Uis Spectrophotometers; Fluorometers, scanning and fixed.

Current or Potential Work Performed for: self or parent company, government, other clients.  
Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.  
Language(s) in Which Services are Provided: english.

#### **SEATRONICS TECHNOLOGIES LTD**

306-3700 Gilmore Way, Burnaby, British Columbia, V5G 4M1.

##### **Research Unit**

Contact: J. Heyrman, President, Tel: (604) 437-4781.

Personnel: Total is 2 of which 2 are scientists and engineers.

Activities: Hydrodynamics of vessels; Specialization in Tug & Barge Design; Proprietary barge stabilizing device Hydrolift-TM & Hydrolift II Skegs. CAD/CAM applied to ship design & ship building; Transportation System Design; Ice breaker design & Ice strengthened vessels; Project management of R&D studies in related fields for others.

Facilities: 32-Bit Computer Graphic Station; Plotter, Printers, etc.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.

Language(s) in Which Services are Provided: english.

#### **SEAWALL-PROTEC LTD**

21 Glendale Avenue, Sackville, Nova Scotia, B4C 3J4.

##### **Research Unit**

Admin. Contact: Earle Scott, Operations Manager, Tel: (902) 865-1444.

Scientific Contact: Per Myklebust, Technical Manager, Tel: (902) 865-1444.

Personnel: Total is 9 of which 2 are scientists and engineers.

Activities: Design, develop and manufacture of fish processing machinery; complete plant layouts; adaptation and upgrading of existing process equipment.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, testing and analysis.

Language(s) in Which Services are Provided: both english and french.

#### **SED SYSTEMS INC.**

P.O. Box 1464, 2174 Airport Drive, Saskatoon, Saskatchewan, S7K 3P7.

##### **SED Research Ltd**

Contact: S. Kumar, Director of SRL, Tel: (306) 244-2393.

Personnel: Total is 21 of which 10 are scientists and engineers.

Activities: Satellite communication products & equipment; TVRO systems; Satellite television receivers; Microwave components for satellite earth stations, small satellite earth stations; FM SCPC or digital SCPC earth stations; Electronic instrumentation and controller for agriculture equipment.

Facilities: Electronic laboratory; microwave clean room; microcomputer development system; photo lithography and chemical processing circuit board and metal parts.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation.

Language(s) in Which Services are Provided: english.

#### **SEIMAC LIMITED**

1378 Bedford Highway, Bedford, Nova Scotia, B4A 1E2.

##### **Research Unit**

Admin. Contact: Hugh Macpherson, President, Tel: (902) 835-9686.

Scientific Contact: Joseph Seiler, Vice-President, Tel: (902) 835-9686.

Personnel: Total is 16 of which 11 are scientists and engineers.

Activities: Microelectronics as applied to marine and oceanographic science; artificial intelligence as applied to pattern recognition; integrated data systems for shipboard; automatic monitoring systems.

Facilities: Microelectronic development systems; on-site computers.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation.

Language(s) in Which Services are Provided: english.

#### **SELCO PHOTORECEPTORS LTD**

541 Lepine Avenue, Dorval, Quebec, H9P 2S9.

##### **Selco Photoreceptors Ltd (R&D)**

Contact: N.N. Khoi, R&D Director, Tel: (514) 636-5210.

Personnel: Total is 4 of which 4 are scientists and engineers.

Activities: Photoconductors materials: Mostly on Selenium; selenium-tellurium alloys; single layer; dual layer. Coating technology; electrostatic potential; measurements - surface voltage; photoconductivity charge decay

Facilities: 3 coaters; Monroe electrostatic voltmeter.

Current or Potential Work Performed for: self or parent company, other clients.

Nature of Work Performed for Others: testing and analysis.

Language(s) in Which Services are Provided: both english and french.

#### **SENSTEK LTD**

P.O. Box 340, Saskatoon, Saskatchewan, S7K 3L3.

##### **Research Unit**

Admin. Contact: R. Ball, Operations Manager, Tel: (306) 374-3966.

Scientific Contact: S.K. Wa, Chief Engineer, Tel: (306) 374-3966.

Personnel: Total is 5 of which 2 are scientists and engineers.

Activities: Development of electronic products for use in agricultural and industrial applications.

Current or Potential Work Performed for: self or parent company, government.

Nature of Work Performed for Others: contract R&D.

Language(s) in Which Services are Provided: english.

#### **SENTROL SYSTEMS LTD.**

4401 Steeles Avenue West, Downsview, Ontario, M3N 2S4.

##### **Hardware Design Department**

Admin. Contact: Jack Tippet, R&D Director, Tel: (416) 661-7000.

Scientific Contact: Larry McNelles, Manager, Hardware Design, Tel: (416) 661-7000.

Personnel: Total is 7 of which 5 are scientists and engineers.

Activities: Applied physics research for the development of on-line sensors for industrial processes. The sensor techniques include: microwave, infrared absorption, x-ray absorption and x-ray fluorescence. Development work also includes the specialized support electronics for the individual measurement and control techniques. Fields of specialization include: infrared spectroscopy,

microwave spectroscopy, nuclear spectroscopy, electronics design, and mechanical design and packaging.

Facilities: Nuclear radiation detectors (proportional counters, ionization chambers, multi-channel analyzer); infrared detectors (thermochemically cooled infrared detectors); microwave oscillators.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation.

Language(s) in Which Services are Provided: english.

#### **Application Design Department**

Admin. Contact: Jack Tippet, Director, R&D,  
Tel: (416) 661-7000.

Scientific Contact: Seyhan Nuyan, Manager, Application Design, Tel: (416) 661-7000.

Personnel: Total is 6 of which 5 are scientists and engineers.

Activities: Development of basic and advanced control strategies for primary industries; Continuous control Algorithm research and development; Research on process identification, self-tuning and adaptive controls; Development of process analysis and simulation systems. The fields of specialization include computer science, process control, adaptive control, and communications.

Facilities: Process Control Test Facilities.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation.

Language(s) in Which Services are Provided: english.

#### **System Design Department**

Admin. Contact: Jack Tippet, Director, R&D,  
Tel: (416) 661-7000.

Scientific Contact: Karl Hallin, Manager, System Design,  
Tel: (416) 661-7000.

Personnel: Total is 8 of which 7 are scientists and engineers.

Activities: Development and analysis of real time operating systems; Development of application support tools for process monitoring and controls; Development of distributed control systems for industrial processes. The fields of specialization include computer science, electrical, electronic and chemical engineering.

Facilities: Process Control System Test Facilities.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation.

Language(s) in Which Services are Provided: english.

#### **SERRES COOPERATIVES DE GUYENNE (LES)**

Guyenne, Abitibi West, Québec, J0Y 1L0.

##### **Serres Coopératives De Guyenne (Les)**

Contact: Fernand Miron, Directeur Général,  
Tel: (819) 746-3131.

Personnel: Total is 1 of which 1 is a scientist or engineer.

Activities: Greenhouse production of seedlings for reforestation: wintering methods and cultivation; black spruce; white spruce; jack pine; red pine; larch.

Current or Potential Work Performed for: self or parent company, other clients.

Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.

Language(s) in Which Services are Provided: french.

Note: Descriptive text has been translated from French.

#### **SERVICES CONVERTO-BRAILLE CYPHOT-GALARNEAU**

123, rue Berri, Hull, Québec, J8Y 4H9.

#### **Research Unit**

Contact: Roland Galarneau, Président, Tel: (819) 770-2825.

Personnel: Total is 3 of which 1 is a scientist or engineer.

Activities: Development of special instruments for visually handicapped persons (example: Braille terminal).

Current or Potential Work Performed for: government.

Nature of Work Performed for Others: contract R&D.

Language(s) in Which Services are Provided: both english and french.

Note: Descriptive text has been translated from French.

#### **SHAVER POULTRY BREEDING FARMS LTD.**

P.O. Box 400, Cambridge (Galt), Ontario, N1R 5V9.

##### **Shaver Genetic and Veterinary Depts.**

Admin. Contact: Gary M. Platsko, Secretary-Treasurer,  
Tel: (519) 621-5191.

Scientific Contact: Dr. A. Kulenkamp, Head Layer Geneticist, Tel: (519) 621-5191.

Personnel: Total is 12 of which 5 are scientists and engineers.

Activities: Practical research involving genetic improvement of economic traits in chicken stocks, including egg quality. A specific egg evaluation laboratory is used to evaluate up to eleven separate traits on a per-egg basis. Research projects on virus eradication, using Enzyme Linked Immunosorbant Assay (ELISA). Experimental projects in immunology, and the development of the ELISA technique into the detection of antibodies.

Facilities: Deformation unit; reflectometer; electronic albumen height gauge; IBM system 34 - data analysis; multi-scan spectrophotometer; centrifuge, incubator, vibrator.

Current or Potential Work Performed for: self or parent company.

Nature of Work Performed for Others: consultation, testing and analysis.

Language(s) in Which Services are Provided: both english and french.

#### **SHAWINIGAN LAVALIN INC.**

620, Dorchester Boulevard West, Montréal, Quebec, H3B 1N8.

##### **Advanced Energy Technology Division**

Admin. Contact: Mr. Saeed Quraeshi, Director,  
Tel: (514) 397-2417.

Scientific Contact: Mr. Brian Richards, Chief Design Engineer, Tel: (514) 397-2403.

Personnel: Total is 19 of which 12 are scientists and engineers.

Activities: Our fields of specialization include the following areas of energy generation: wind; photovoltaic; fuel cells; solar/thermal; solar/wind; hydrogen.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation.

Language(s) in Which Services are Provided: both english and french.

#### **SHELL CANADA LTD**

525-3rd Avenue South West, Calgary, Alberta, T2P 2M7.

##### **Calgary Research Centre**

3655 36th Street North West, Calgary, Alberta, T2L 1Y8.

Admin. Contact: Mr. Dave Fleming, Manager, CRC,  
Tel: (403) 270-5556.

Scientific Contact: Mr. R.R. Picard, Vice-President, Research, Tel: (403) 232-4800.

Personnel: Total is 101 of which 40 are scientists and engineers.

Activities: Shell's Calgary Research Centre's efforts are being directed towards improving techniques for exploration and production of oil and gas from conventional and non-conventional sources. Work at the centre relating to recovery technology for enhanced oil recovery and insitu oil sands complements field research and development currently taking place. Specialization is in the following areas: geology; petroleum engineering; production technology; materials and corrosion; electronics and instrumentation.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: english.

#### **Oakville Research Centre**

3415 Lakeshore Road West, Oakville, Ontario, L6J 5C7.

Admin. Contact: Mr. Robert Marshall, Manager, ORC,  
Tel: (416) 827-1141.

Scientific Contact: Mr. R.R. Picard, Vice-President,  
Research, Tel: (403) 232-4800.

Personnel: Total is 125 of which 42 are scientists and engineers.

Activities: Shell's Oakville Research Centre investigates improvements to petroleum and petrochemical products and to manufacturing processes that will reduce costs and save energy. It is particularly active in the development of fuel-efficient engine oils and lubricants. The Centre contains modern pilot plant facilities designed to test improved refining processes by simulating refinery operations on a small scale.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: english.

#### **SHERREX SYSTEMS LTD**

4196 93rd Street, Edmonton, Alberta, T6E 5P5.

##### **Research Unit**

Contact: Wayne Sherrard, President, Tel: (403) 462-4085.

Personnel: Total is 3 of which 1 is a scientist or engineer.

Activities: Research, design and develop the following: Industrial monitoring and control systems. Specializing in very low power, wide temperature applications. Also develop products to program memory devices. We are the developers of the SSR22 RTU Microcomputer units currently used in building energy management systems, oil and gas applications and power demand applications.

Facilities: Typical Digital Analysis Equipment.

Current or Potential Work Performed for: self or parent company, other clients.

Nature of Work Performed for Others: contract R&D, consultation.

Language(s) in Which Services are Provided: english.

#### **SHERITT GORDON MINES LIMITED**

Box 2800 Commerce Court West, Toronto, Ontario, M5L 1B1.

##### **Sherritt Research Centre and Engineering Dept.**

Fort Saskatchewan, Alberta, T8L 2P2.

Contact: Mr. H. Veltman, Director, Tel: (403) 998-6432.

Personnel: Total is 130 of which 60 are scientists and engineers.

Activities: Development of extraction metallurgical processes based on hydrometallurgy or pressure hydrometallurgy for recovery of Nickel, Copper, Cobalt, Zinc, Uranium, Gold and Platinum group metals; Development of fabricated metal products containing preferably Nickel and Cobalt in form of strip, coinage blanks, metal powders or composite powders, erosion resistant materials and magnetic materials.

Facilities: Chemical metallurgy lab; physical metallurgy lab; analytical lab; pilot plants; development and engineering offices.

Current or Potential Work Performed for: self or parent company, other clients.

Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.

Language(s) in Which Services are Provided: english.

#### **SHL SYSTEMHOUSE INC.**

99 Bank Street, 3rd Floor, Ottawa, Ontario, K1P 6B9.

##### **Research Unit**

Contact: A. Burdett, Director of Technology,  
Tel: (613) 236-9734.

Personnel: Total is 20 of which 20 are scientists and engineers. (Note: Staff assigned to R&D projects as required. Averages 20 at any time.)

Activities: Commercial application software products to run on a variety of computer hardware. Operating, communications and other system software suitable for commercial computers. Real-time computer software, primarily military and maritime traffic control systems.

Facilities: Digital VAX and PDP 11 Computers; Hewlett-Packard HP3000; AT&T 3B2; IBM 4361; IBM PC's; WANG VS.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation.

Language(s) in Which Services are Provided: both english and french.

#### **SICO INC.**

2505 Métropole, Longueuil, Québec, J4G 1E5.

##### **Research Unit**

Contact: Kenneth Delamater, Vice-President, R&D,  
Tel: (514) 527-5111.

Personnel: Total is 9 of which 9 are scientists and engineers.

Activities: Research and Development is composed mainly of evaluating new resins, pigments and additives in order to formulate new products for the industrial paint market.

Facilities: Gas chromatograph; liquid chromatograph; spectrophotometer; salt spray cabinet; roller coater - ovens; dispersion equipment.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: both english and french.

#### **SILONEX INC.**

2150 Ward Street, Montréal, Québec, H4M 1T7.

##### **Silonex R&D Department**

Contact: D.A. Anderson Ph D, President,  
Tel: (514) 744-5507.

Personnel: Total is 15 of which 9 are scientists and engineers.

Activities: Photoconductive detector research and development; photovoltaic silicon detectors development; P.V. solar modules development.

Facilities: Plasma etch apparatus; Most equipment for fabricating a sealed photoconductive or photovoltaic detector.

Current or Potential Work Performed for: self or parent company, government.

Nature of Work Performed for Others: contract R&D.

Language(s) in Which Services are Provided: english.

#### **SINCLAIR & VALENTINE**

4590 Dufferin Street, Downsview, Ontario, M3H 5S5.

#### Research Unit

Admin. Contact: Mr. Attilio Paolillo, General Manager  
Eastern Canada, Tel: (416) 661-3100.

Scientific Contact: Mr. Domingo Chan, R&D Director,  
Tel: (416) 661-3100.

Personnel: Total is 7 of which 6 are scientists and engineers.

Activities: Formulation of printing inks and coatings for all types of printing presses and substrates in Canada and abroad. Development of environmentally acceptable systems to reduce air pollution caused by photo-chemically reactive solvents.

Facilities: Pye Unicam infrared spectrophotometer; Hewlett - Packard 5840 A gas chromatograph; IBM 7409 scanning colour sensor and IBM 5110 computer; microscope with camera; electronic tack-o-scope; printability tester; gravure & flexo laboratory press.

Current or Potential Work Performed for: self or parent company, other clients.

Nature of Work Performed for Others: consultation, testing and analysis.

Language(s) in Which Services are Provided: english.

#### SMITH & NEPHEW INC.

2100-52nd Avenue, Lachine, Québec, H8T 2Y5.

**Smith & Nephew Canada (Inc.) (Technical Services Department)**

Admin. Contact: Mr. Steven J. Arless, President,  
Tel: (514) 636-0772.

Scientific Contact: Dr. D. Crosilla, Technical Services Manager, Tel: (514) 636-0772.

Personnel: Total is 3 of which 2 are scientists and engineers.

Activities: Product Development; (Toiletry, Medical Devices); Test method development; Pharmaceutical test method development; Process development.

Facilities: High Pressure Liquid Chromatograph; Tensile Pullers (INSTRONS); Infrared Spectrophotometers.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: both english and french.

#### SMITH-ROLES LTD

P.O. Box 907, 46th Street and Millar Avenue, Saskatoon, Saskatchewan, S7K 3M5.

##### Research Unit

Contact: C. Roles, President, Tel: (306) 931-1161.

Personnel: Total is 7 of which 3 are scientists and engineers.

Activities: Electronics; farm machinery.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: english.

#### SNC GROUP INC. (THE)

1 Complexe Desjardins, Montréal, Québec, H5B 1C8.

##### Technical Development Department SNC Inc.

Admin. Contact: Dr. R. L'Archevêque, Vice-President,  
Technical Development, Tel: (514) 282-9551.

Scientific Contact: Dr. N. Cooke, Manager, Tech. Development Dept., Tel: (514) 282-9551.

Personnel: Total is 16 of which 14 are scientists and engineers.

Activities: One of the main objectives of the department is to carry out research and development work on the conversion of solid fuels and related materials to other forms of energy. The main areas of expertise are: coal conversion, biomass conversion, and engine development. Other areas of research are: liquid products from natural gas by way of acetylene, enhanced oil recovery,

microbial leaching of ores, separation of oil field emulsions, combustion technology, and development of special purpose computer controlled machines.

Current or Potential Work Performed for: self or parent company, government.

Nature of Work Performed for Others: contract R&D.

Language(s) in Which Services are Provided: both english and french.

#### SOCIETE METROHEAT INC.

4609 Iberville Street, Montréal, Québec, H2H 2L9.

##### Research and Development Laboratory

Admin. Contact: Marcello Paolini, President,  
Tel: (514) 524-7575.

Scientific Contact: Charles Toeman, Head of Department,  
Tel: (514) 524-7575.

Personnel: Total is 5 of which 2 are scientists and engineers.

Activities: Research in the area of combustion, development of high efficiency oil and gas fired heating equipment. Research into high efficiency burners, electronically controlled; researching and developing heat transfer units; development of miniaturisation of energy sourced equipment.

Facilities: No specialized equipment is required but up-to-date equipment and instrumentation is available that meets standards set by approval authorities.

Current or Potential Work Performed for: self or parent company, government.

Language(s) in Which Services are Provided: both english and french.

#### SOCIETE D'ALUMINIUM REYNOLDS (CANADA) LTEE

290, St. Laurent, Cap-de-la-Madeleine, Québec, G8T 7W9.

##### Département R-D

Admin. Contact: Jean Marchildon, Vice-président, R-D,  
Tel: (819) 373-6342.

Scientific Contact: Patrick Corcoran, Gérant, Services chimiques, Tel: (819) 373-6248.

Personnel: Total is 14 of which 9 are scientists and engineers.

Activities: Applied research in the manufacturing of aluminum sheets and foil, and in the printing and laminating of the aluminum foil.

Facilities: Spectrograph (alloy analysis); infrared spectrograph (laminating oil); gas chromatograph; tensile tester.

Current or Potential Work Performed for: self or parent company, other clients.

Nature of Work Performed for Others: testing and analysis.

Language(s) in Which Services are Provided: both english and french.

Note: Descriptive text has been translated from French.

#### SOFTWARE KINETICS LTD

P.O. Box 680, 65 Iver Road, Stittsville, Ontario, K0A 3G0.

##### Research Unit

Admin. Contact: D.C. Webster, President,  
Tel: (613) 226-6792.

Scientific Contact: Richard D. Graham, Director, R&D,  
Tel: (613) 226-6792.

Personnel: Total is 32 of which 28 are scientists and engineers.

Activities: Research and development is carried out in the general area of Electronic Warfare. Areas of specialization include: real time graphics; real time data processing in particular as applied to ESM systems and general simulation of EW scenarios involving radar systems and counter measures.

Current or Potential Work Performed for: government, other clients.  
Nature of Work Performed for Others: contract R&D, consultation.  
Language(s) in Which Services are Provided: english.

#### **SOLARSYSTEMS INDUSTRIES LTD**

2-11771 Horseshoe Way, Richmond, British Columbia, V7A 4V4.

##### **Research Unit**

Admin. Contact: James Alexander, Controller,  
Tel: (604) 271-2621.

Scientific Contact: Erich W. Hoffman, President,  
Tel: (604) 271-2621.

Personnel: Total is 3 of which 3 are scientists and engineers.

Activities: Solar hot water applications - with particular reference to solar pumps and solar water circulation. Electro-plating - plating copper sheet with nickel/chromium surface for absorbcency of solar thermal energy using a continuous process rather than a batch process. Foils - production of thin copper foils with surfacing suitable for data board application and solar applications.

Facilities: Chemical laboratory; in-house solar systems; continuous electro-plating machine; emissometer - reflectometer; atomic absorption spectrometer.

Current or Potential Work Performed for: self or parent company, government.

Nature of Work Performed for Others: contract R&D.

Language(s) in Which Services are Provided: english.

#### **SOLCAN LTD**

R.R. #3, London, Ontario, N6A 4B7.

##### **Research Unit**

Contact: R.K. Swartman, President, Tel: (519) 473-0501.

Personnel: Total is 3 of which 3 are scientists and engineers.

Activities: Heat transfer and fluid mechanics; solar system design.

Facilities: Doric 205 recorder; Doric 210 Recorder; MacIntosh 128k micro-computer.

Current or Potential Work Performed for: self or parent company, government.

Nature of Work Performed for Others: contract R&D.

Language(s) in Which Services are Provided: english.

#### **SOLWAY ENERGY CORPORATION**

30-942 Marine Drive South West, Vancouver, British Columbia, V6P 5Z2.

##### **Research Unit**

Contact: J.L. Richardson, President, Tel: (604) 324-3327.

Personnel: Total is 4 of which 2 are scientists and engineers.

Activities: Solar engineering (Thermal).

Current or Potential Work Performed for: self or parent company, government.

Nature of Work Performed for Others: contract R&D.

Language(s) in Which Services are Provided: english.

#### **SONOTEK LIMITED**

2410-5 Dunwin Drive, Mississauga, Ontario, L5L 1J9.

##### **Research Unit**

Admin. Contact: Alec Kitson, President,  
Tel: (416) 828-6810.

Scientific Contact: Bob Pickering, Research and Development Manager, Tel: (416) 828-6810.

Personnel: Total is 6 of which 4 are scientists and engineers.

Activities: Design and development of computer hardware and software for industrial and geophysical applications.

Fields of specialization include hardware/software interfaces to industrial sensors and controls, industrial data acquisition and process control, airborne geophysical data acquisition and compensation systems for airborne magnetic measurements.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D.

Language(s) in Which Services are Provided: english.

#### **SPAR AEROSPACE LIMITED**

Suite 403, 6303 Airport Road, Mississauga, Ontario, L4V 1R8.

##### **Satellite and Aerospace Systems Division**

P.O. Box 850, 21025 Trans Canada Highway, Ste Anne de Bellevue, Quebec, H9X 3R2.

Admin. Contact: A.R. Wilson, Director, Finance and Administration, Tel: (514) 457-2150.

Scientific Contact: F.J.F. Osborne, Director, Advanced Systems, Tel: (514) 457-2150.

Personnel: Total is 550 of which 200 are scientists and engineers.

Activities: Antenna development - design and realization of microwave distribution systems, multiplex and filters for space and earth communications, antennas/systems in all bands. Microwave development - design of units (receivers, channel amplifiers, radars, solid state amplifiers, transmitters) in microwave bands. Electronics development - design and realization of electronic power conditions, processor based computers, general digital electronics. Systems development - conceptual development and requirements, specifications, testing technologies, mission analysis at the subsystem and spacecraft levels. Manufacturing processes - development of advanced MIC assembly techniques, brazing and soldering, plating etc. of aluminum, magnesium, titanium, graphite epoxy composites, kevlar, etc.

Facilities: Microwave test equipments all bands; automatic test equipment facility; thermal vacuum test chambers; vibration testing.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.

Language(s) in Which Services are Provided: both english and french.

##### **Communications Systems Division**

P.O. Box 850, 21025 Trans Canada Highway, Ste. Anne de Bellevue, Quebec, H9X 3R2.

Admin. Contact: L. Arsenault, Director, Program Management, Tel: (514) 457-2150.

Scientific Contact: W.S. Corless, Director, Engineering, Tel: (514) 457-2150.

Personnel: Total is 74 of which 38 are scientists and engineers.

Activities: Digital and analogue processing and modulation equipment for satellite communication systems. Communication satellite systems for SCPC, analogue or digital modulation employing FM, PCM and CVSD. Communication satellite systems using TDMA/DSI in compliance with Intelsat specifications. Frequency conversion between Intermediate frequencies and microwave frequencies for reception and transmission in satellite communication networks. Computer systems development for traffic processing and satellite network control includes use of A - high level language as PASCAL, ASSEMBLER, B - multi-processing architecture. Development and application of VLSI devices, multi-layer printed circuit boards, into sophisticated signal processing products for the terrestrial earth stations for the satellite industry.

Facilities: As required for M/W development in Ku, C, L Bands; IBM - at based CAD; as required for High and Low speed digital circuit development; HP68000 software development facility.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation.

Language(s) in Which Services are Provided: both english and french.

#### **Defence Systems Division**

4100 Weston Road, Weston, Ontario, M9L 1W7.

Admin. Contact: Howard S. Kerr, Chief Scientist,  
Tel: (416) 746-7252.

Scientific Contact: Robert D. Reeves, Supervisor, R&D,  
Tel: (416) 746-7252.

Personnel: Total is 20 of which 18 are scientists and engineers.

Activities: Design of refractive and reflective infrared optical systems employing sophisticated automatic computer optical design programs (Scip and Codev). Systems studies on Advanced Infrared Search and Target Designation Systems (IRSTD). An Infrared Development facility (IDF) has been constructed to perform R&D on all aspects of Infrared Search systems in particular the incorporation of advances like focal plane detector arrays and signal processing techniques. The facility consists of operation and calibration equipment for the infrared. Signal and data processing development R&D in generating linear and non-linear clutter rejection algorithms, and the development of a high density MOS device which will provide a complete data and signal processing capability. Next generation IRSTD - R&D in sensors, the incorporation of new optical systems and the addition of an electro-optical tracker. New technology - R&D in the application of integrated and fibre optics in Infrared systems, in particular IRSTD. FLIR application - study of FLIR developments and applications. Fields of Specialization: optical system design, optical instrumentation, design of opto-mechanical systems, signal processing techniques, low noise preamplifier design, digital electronic design, optimum display systems design, software engineering, absolute infrared radiometry and laboratory equipment design.

Facilities: Infrared noise equivalent irradiance 12 inch diameter collimator; extended infrared source 12 inch collimator; infrared detector calibration facility; absolute radiometers for calibration; infrared monochromator for measuring transmission and reflectivity of materials; numerous computer software programs for engineering analysis (optical, electronic circuit analysis, mech. and thermal analysis, etc.).

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D.

Language(s) in Which Services are Provided: both english and french.

#### **Remote Manipulator Systems Division**

1700 Ormont Drive, Weston, Ontario, M9L 2W7.

Admin. Contact: E.R. Grimshaw, Vice President and General Manager, Tel: (416) 745-9680.

Scientific Contact: G. Norgate, Manager, R&D,  
Tel: (416) 745-9680.

Personnel: Total is 306 of which 165 are scientists and engineers.

Activities: Teleoperators and robots for space: this unit was established to design and develop remote manipulator system for the space shuttle. Key technologies include control theory, space-qualified actuators and drive mechanisms, computer technology,

and systems analysis. Current development effort is aimed at future space robotics requirements and is focused on sensory feedback, path planning and obstacle avoidance, computer vision, expert systems, and advanced man-machine interfaces. Teleoperators and robots for industrial applications: remotely controlled systems are developed for use in hostile environments. Currently a system for fuel tube replacement in Candu nuclear reactors is being tested. Design work also includes equipment designed to improve safety in mines. Technologies developed for space will be used on future industrial systems.

Facilities: Simulator facility (SIMFAC) for the Canadarm; air-bearing floor test facility for Canadarm; Perkin Elmer 3250 minicomputer; Trapix 5500 image processor; Cincinnati Milacron T3 robot.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.

Language(s) in Which Services are Provided: english.

#### **SPARTON OF CANADA LIMITED**

P.O. Box 5125, 100 Elm Street, London, Ontario, N6A 4N2.

**Sparton of Canada Limited, Research and Development Centre**

Admin. Contact: C.L.T. Corbin, Vice-President, Director of Engineering, Tel: (519) 455-6320.

Scientific Contact: Dr. F.E. Bales, Research & Development Manager, Tel: (519) 455-6320.

Personnel: Total is 55 of which 23 are scientists and engineers.

Activities: Underwater acoustics; electronic design (analogue and digital); signal processing; hydrodynamics; transducers; high power, depth compensated underwater sound projectors; aerodynamics; switch mode and linear power supplies; radio transmitter, receivers and antennas; electronic warfare expendables; computerized test equipment.

Facilities: Hydrodynamic tow test tank, 200,000 gal. acoustic test tank; 45,000 gal. acoustic test tank; RF shielded room and range; staticombe; engineering computer; extensive electronics laboratories.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.

Language(s) in Which Services are Provided: english.

#### **SPERRY INC.**

3150 Miller Avenue, Dorval, Quebec, H9P 1K5.

**Sperry Inc., Electronic Systems**

Contact: Mr. M. Boghdady, Group Manager, Development Engineering, Tel: (514) 683-7330.

Personnel: Total is 52 of which 14 are scientists and engineers.

Activities: Engaged in research and development in the field of power conversion/supplies as applicable to data processing equipment.

Facilities: Power conversion - Dorval; conducted EMI test facility - Dorval.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: english.

**Sperry Electronic Systems**

Hwy 17, PO Box 1300, Rockland, Ontario, K0A 3K0.

Contact: Mr. Barry Thomson, Engineering Manager,  
Tel: (613) 446-6011.

Personnel: Total is 273 of which 16 are scientists and engineers.

Activities: Data and voice communications; Real time simulation and training products.

Facilities: Microcomputer development systems.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: english.

#### **ST. MARY'S CEMENT COMPANY**

800-2200 Yonge Street, Toronto, Ontario, M4S 2C6.

##### **Engineering and Research Division**

104 Waverly Rd, Suite 206, Bowmanville, Ontario, L1C 3W0.

Admin. Contact: J.O. Down, Vice-President, Engineering and Research, Tel: (416) 623-1722.

Scientific Contact: W.J. Prout, Manager, Research and Quality Control, Tel: (519) 284-1020.

Personnel: Total is 7 of which 4 are scientists and engineers.

Activities: Internal projects related to the manufacture and use of Portland Cement.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: english.

#### **STAKE TECHNOLOGY LTD**

208 Wycroft Road, Oakville, Ontario, L6K 3T8.

##### **Research Unit**

Admin. Contact: Marnie Ing, Laboratory Supervisor, Tel: (416) 842-4560.

Scientific Contact: William Esdale, V.P. - Nutrition, Tel: (416) 842-4560.

Personnel: Total is 14 of which 4 are scientists and engineers.

Activities: A process to convert waste biomass into cattlefeed, chemicals and pulp and paper.

Facilities: Laboratory high pressure reactor; gas and liquid chromatography.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, testing and analysis.

Language(s) in Which Services are Provided: english.

#### **STANGE CANADA INC.**

3340 Orlando Drive, Mississauga, Ontario, L4V 1C7.

##### **Research Unit**

Admin. Contact: John Clark, Vice President of Administration, Tel: (416) 678-1220.

Scientific Contact: M. Neale, Mgr. Research & Analytical Service, Tel: (416) 678-1220.

Personnel: Total is 10 of which 10 are scientists and engineers.

Activities: Spices; essential oil; flavours; analytical methods development.

Facilities: Computerized G.C.; H.P.L.C.; thin film evaporator (spinning ban); sensory evaluation laboratory; experimental thermal processing equipment.

Current or Potential Work Performed for: self or parent company, other clients.

Nature of Work Performed for Others: consultation.

Language(s) in Which Services are Provided: english.

#### **STATE INDUSTRIES LTD**

1104 Wall Street, Winnipeg, Manitoba, R3E 2R9.

##### **Research Unit**

Contact: Mr. S.L. Baldwin, President, Tel: (204) 774-1211.

Personnel: Total is 4 of which 2 are scientists and engineers.

Activities: Rock Drill Muffler design development and production facilities; vibration isolation in hand-held Rock Drills; vibration isolation in electric and off-road

vehicles; electrical isolation components of trolley buses; elastomers in all aspects of underground mining equipment; elastomer product research design development specializing in polyurethane and silicone rubbers.

Facilities: Sound level testing; vibration testing.

Current or Potential Work Performed for: other clients.

Nature of Work Performed for Others: contract R&D, consultation.

Language(s) in Which Services are Provided: english.

#### **STELCO INC.**

P.O. Box 2030, Station A, Hamilton, Ontario, L8N 3T1.

##### **Stelco Inc., Research & Development**

Admin. Contact: Mr. J. C. McKay, Director, R&D, Tel: (416) 528-2511.

Scientific Contact: Mr. J.C. McKay, Director, R&D, Tel: (416) 528-2511.

Personnel: Total is 106 of which 39 are scientists and engineers.

Activities: Applied research and development in steel products and processes, comprising coke, iron, steel, casting, and metallurgical processes/technologies including; hot rolling, forging and extrusion; cold rolling, drawing and forming; heat treatment and annealing; metallic and polymer coating; corrosion control; welding; fabrication and finishing; instrumentation; process control and computer applications.

Facilities: Steelmaking furnaces (to 3 tons); mini rolling mill; SEM with EDX2; electron probe microanalyzer; automated fatigue tester; micro-computer development; Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: english.

#### **STERLING DRUG LTD.**

400 Yonge St. S., Aurora, Ontario, L4G 3H6.

##### **Medical Department**

Contact: Dr. K.B. Nguyen, Vice-President, Medical Affairs, Tel: (416) 773-1122.

Personnel: Total is 20 of which 9 are scientists and engineers.

Activities: Clinical research and pharmaceutical development of new and marketed drugs.

Facilities: Pharmaceutical development laboratory.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: english.

#### **STERLING LIMITED**

P.O. Box 554, 5-9 Philip Street, St. Catharines, Ontario, L2R 6X1.

##### **Industrial Paints & Insulating Varnishes Research & Development Laboratory**

Contact: Mr. J.E. Hanson, President, Tel: (416) 684-2322.

Personnel: Total is 7 of which 6 are scientists and engineers.

Activities: Research and development of industrial coatings including high solids and water reduced formulae.

Facilities: Testing equipment specific to paint and varnish development.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: english.

##### **Powder Coatings Research and Development Laboratory**

Contact: J.E. Hanson, President, Tel: (416) 684-2322.

Personnel: Total is 5 of which 2 are scientists and engineers.

Activities: Research and development of powder coating technology.

Facilities: Equipment specific to development of powder coatings.  
Current or Potential Work Performed for: self or parent company.  
Language(s) in Which Services are Provided: english.

#### **STERNSON LIMITED**

22 Mohawk Street, P.O. Box 130, Brantford, Ontario, N3T 5N1.

##### **Research & Development Laboratory**

Admin. Contact: N.P. Mailvaganam, Vice President of Research & Development, Tel: (519) 759-6600.  
Scientific Contact: M.F. Flynn, Senior Group Leader, Tel: (519) 759-6600.  
Personnel: Total is 11 of which 8 are scientists and engineers.  
Activities: Cement and concrete chemistry and materials properties; urethane; epoxy and hybrid polymers; polymer lattice. Nature - cement study of the influence of chemicals on the hydration of cement, synthesis of hybrid urethane-epoxy polymers characterisation and study of the mechanical properties.  
Facilities: I.R. spectrophotometer; instron; atomic absorptometer.  
Current or Potential Work Performed for: self or parent company.  
Language(s) in Which Services are Provided: english.

#### **STORK CRAFT LTD**

11511 #5 Road, Richmond, British Columbia, V7A 4E8.

##### **Research Unit**

Contact: E.H. James, Manager, R&D, Tel: (604) 274-5121.  
Personnel: Total is 2 of which 2 are scientists and engineers.  
Activities: Furniture design and testing.  
Current or Potential Work Performed for: self or parent company.  
Language(s) in Which Services are Provided: english.

#### **STRITE INDUSTRIES LIMITED**

298 Shepherd Avenue, Cambridge, Ontario, N3C 1V1.

##### **Strite Industries Limited, Engineering Division**

Admin. Contact: J.D. Strite, President and General Manager, Tel: (519) 658-9361.  
Scientific Contact: Austin Hills, P.Eng., Plant Engineer, Tel: (519) 658-9361.  
Personnel: Total is 1 of which 1 is a scientist or engineer.  
Activities: Development and design of mechanical components and assemblies with extra close tolerance and/or wear characteristics; Specialization: Prototyping of small (1 cu. ft. max) components and assemblies requiring high degree of accuracy, involving ultra precision machining and having potential production volumes.  
Facilities: Pressure test; leak test; cnc wire edm machinery; coordinate and electric measuring equipment; sophisticated machining equipment.  
Current or Potential Work Performed for: self or parent company, other clients.  
Nature of Work Performed for Others: contract R&D.  
Language(s) in Which Services are Provided: english.

#### **STUART PLASTICS LTD**

7435 Lowland Drive, Burnaby, British Columbia, V5J 5A8.

##### **Research Unit**

Admin. Contact: Mr. MacSanders, General Manager, Tel: (604) 437-5029.  
Personnel: Total is 5 of which 2 are scientists and engineers.

Activities: Developing specialized coloured copolymer pellets and associated recoat materials.  
Facilities: Blenders; extrusion equipment; spectro-photometer.  
Current or Potential Work Performed for: self or parent company, other clients.  
Nature of Work Performed for Others: testing and analysis.  
Language(s) in Which Services are Provided: english.

#### **SULFURCRETE PRODUCTS INC**

5516A 40th Street South East, Calgary, Alberta, T2C 2A1.

##### **Research Unit**

Contact: Dr. A. Vroom, President, Tel: (403) 279-2720.  
Personnel: Total is 3 of which 2 are scientists and engineers.  
Activities: Sulphur co-polymerization with hydrocarbons; sulphur concrete manufacturing R&D; sulphur concrete handling and finishing methods; modification of sulphur concrete properties for specific applications.  
Facilities: Pilot plant equipment consisting of sulphur melter, liquid sulphur pump, chemical reaction vessel (stirred), crusher, etc.  
Current or Potential Work Performed for: self or parent company.  
Language(s) in Which Services are Provided: both english and french.

#### **SUN-RYPE PRODUCTS LTD**

1165 Ethel St., Kelowna, B.C., V1Y 7N6.

##### **Research & Development Laboratory**

Admin. Contact: Lawrence Bates, Marketing Manager, Tel: (604) 762-2604.  
Scientific Contact: Joan Dolson, Product Development Coordinator, Tel: (604) 762-2604.  
Personnel: Total is 2 of which 2 are scientists and engineers.  
Activities: New product development; product improvement; assist in production improvements.  
Facilities: Can closing machine; spectro photometer; tintometer; dissolved oxygen meter; liquid chromatographs.  
Current or Potential Work Performed for: self or parent company.  
Language(s) in Which Services are Provided: english.

#### **SUNEARTH SOFTWARE INC.**

14424 85th Avenue, Edmonton, Alberta, T5R 3Z3.

##### **Research Unit**

Admin. Contact: Bruce McFadden, Tel: (403) 484-5303.  
Scientific Contact: Glen Langford, Tel: (403) 484-5303.  
Personnel: Total is 3 of which none are scientists and engineers.  
Activities: A computer software system specifically developed for the construction industry.  
Facilities: Computer.  
Current or Potential Work Performed for: self or parent company, government, other clients.  
Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.  
Language(s) in Which Services are Provided: english.

#### **SURGIKOS CANADA INC**

1355 Lansdowne Street West, Peterborough, Ontario, K9J 7X2.

##### **Technical Services Department**

Contact: Mr. D.B. Hons, Technical Services Manager, Tel: (705) 743-8200.  
Personnel: Total is 2 of which 2 are scientists and engineers.

Activities: Latex Glove Manufacturing, Cold Seal Packaging, Cobalt Sterilization Studies, Disposable Products for Medical Use.  
Facilities: Instron Tester; Clean Room Facility.  
Current or Potential Work Performed for: self or parent company.  
Language(s) in Which Services are Provided: english.

#### **SWAN WOOSTER ENGINEERING CO. LTD.**

1190 Hornby Street, Vancouver, B.C., V6Z 2H6.

##### **Mechanical Department**

Contact: C. William McLachlan, Manager and Chief Mechanical Engineer, Tel: (604) 684-9311.  
Personnel: Total is 30 of which 18 are scientists and engineers.  
Activities: Shiploading concepts; materials handling equipment; computer programs for conveyors, materials handling equipment; robotics applications; computer aided control systems; maintenance programs; machine vibration and dynamic stress analysis; bulk materials slurry handling systems; heat pumps, air compressors d'air, heat transfer.  
Facilities: Shared use of computer hardware and software including: PDP 11/44; main frame links; 2 IBM PC's; 4 IBM XT's; 2 plotters; 3 video graphics; Cyber 175 access; high and low speed communications; various computer programs and languages.  
Current or Potential Work Performed for: self or parent company, other clients.  
Nature of Work Performed for Others: consultation.  
Language(s) in Which Services are Provided: english.

##### **Grain Group**

Contact: Joel A. Cawker, Manager, Tel: (604) 684-9311.  
Personnel: Total is 3 of which 2 are scientists and engineers.  
Activities: Computer-aided simulation analysis of grain terminal operations including receiving, cleaning, storing and shipping. Automated process control of grain cleaning.  
Facilities: Shared use of computer hardware and software including: PDP 11/44; Main frame links; 2 IBM PC's; 4 IBM XT's; 2 plotters; 3 video graphics; Cyber 175 access; high and low speed communications; various computer programs and languages.  
Current or Potential Work Performed for: self or parent company, other clients.  
Nature of Work Performed for Others: contract R&D, consultation.  
Language(s) in Which Services are Provided: english.

##### **Offshore & Arctic Department**

Admin. Contact: John C. Bruce, Manager, Tel: (604) 684-9311.  
Scientific Contact: Norman F.B. Allyn, Project Manager, Tel: (604) 684-9311.  
Personnel: Total is 12 of which 9 are scientists and engineers.  
Activities: Ice mechanics; Arctic structures; Arctic materials development for resisting high ice pressures and forces; ice/structure interactions; model test design and supervision in labs in Calgary and Ottawa; field test design and supervision in Canadian and Alaskan Beaufort Seas.  
Facilities: Shared use of computer hardware and software including: PDP 11/44; IBM XT PC's; main frame links; 2 IBM PC's; 4 IBM XT's; 2 plotters; 3 video graphics; Cyber 175 access; high and low speed communications; various computer programs and languages including FLEX and SLAM.  
Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.  
Language(s) in Which Services are Provided: english.

##### **Economics and Transportation Department**

Admin. Contact: Craig Clarke, Manager, Tel: (604) 684-9311.  
Scientific Contact: Brian A. Radomske, Simulation Specialist, Tel: (604) 684-9311.  
Personnel: Total is 7 of which 4 are scientists and engineers.

Activities: The R&D performed within this unit is concerned with computer software development for transportation systems with emphasis on comparative transportation costs. Examples of this research include: unit train route/costing model to study alternative rail routes to move bulk commodities. An extension of this model for way freight and transfer trains for more general freight movements of mixed commodities has been made; vessel traffic movement model to study vessel congestion and harbour capacity for mixed pleasure and commercial traffic; ocean voyage costing model; simulation of port terminal operations to study alternative equipment schemes for bulk commodity handling.

Facilities: Shared use of computer hardware and software including: PDP 11/44; main frame links; 2 IBM PC's; 4 IBM XT's; 2 plotters; 3 video graphics; Cyber 175 access; high and low speed communications; various computer programs and languages including GPSS, GPSS-PC and SLAM.

Current or Potential Work Performed for: self or parent company, government, other clients.  
Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.  
Language(s) in Which Services are Provided: english.

##### **Ports & Marine Department**

Admin. Contact: Jim Armstrong, Manager, Tel: (604) 684-9311.  
Scientific Contact: Charles Birt, Supervisor, Research & Development, Tel: (604) 684-9311.  
Personnel: Total is 43 of which 29 are scientists and engineers.  
Activities: Wave hindcasting of sea states from wind field data; modification of computer programs for refraction, diffraction, shoaling and frictional attenuation of waves; prediction of longshore and on/offshore sediment transport rates; the prediction of local and general scour around structures; the formulation of 1 and 2-dimensional tidal current models; the evaluation of wave forces on large structures.  
Facilities: Shared use of computer hardware and software including: PDP 11/44; main frame links; 2 IBM PC's; 4 IBM XT's; 2 plotters; 3 video graphics; Cyber 175 access; high and low speed communications; various computer programs and languages.  
Current or Potential Work Performed for: self or parent company, government, other clients.  
Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.  
Language(s) in Which Services are Provided: english.

##### **Datap Systems (a division of Swan Wooster Consultants Ltd.)**

Admin. Contact: Douglas Smith, Manager, Tel: (604) 688-7751.  
Scientific Contact: T.W. Engelhart, Manager Special Projects, Tel: (604) 688-7751.  
Personnel: Total is 17 of which 13 are scientists and engineers.  
Activities: Supervisory control and data acquisition; operations management, as related to real time control and information systems; operations simulation and

modelling, as applied with real time control systems; computer aided dispatch of vehicular traffic via radio.  
Facilities: 1 IBM PCXT; 1 IBM PC; 2 Motorola 6800 Exerciser; various computer programs and languages.  
Current or Potential Work Performed for: self or parent company, government.  
Nature of Work Performed for Others: contract R&D, consultation.

Language(s) in Which Services are Provided: english.

#### **Computer Services Department**

Contact: Brian George, Manager, Computer Services,  
Tel: (604) 684-9311.

Personnel: Total is 6 of which 3 are scientists and engineers.

Activities: The R&D performed is in the area of analytical engineering support programming. Software for graphical display of structural characteristics, data reduction and expansion algorithms, program development aids, pre and post processors for rapid interpretation of analytical results and graphics support libraries for other developers are the major R&D functions performed by this unit.

Facilities: PDP 11/44 (digital equipment); 2 IBM PCs and 4 IBM XT's; CYBER 175 (via control data); 2 Plotters and 3 Video Graphics; High and Low Speed Communications.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: english.

#### **SYDNEY DEVELOPMENT CORP.**

600-1385 8th Avenue West, Vancouver, British Columbia, V6H 3V9.

##### **Research Unit**

Contact: T. Haksi P.Eng., Vice-President, R&D,  
Tel: (604) 734-8822.

Personnel: Total is 47 of which 39 are scientists and engineers.

Activities: All R&D work revolves around computer software. The fields of endeavour range from improved development methodologies and technologies to integrated hardware and software for communications. In addition, significant effort is being expended on education structure and presentation using a computer medium.

Facilities: IBM 4341 Grp II; IBM PC's, XT's, AT's; several UNFX, PC's, AT&T 3B2, Cromenco, etc.

Current or Potential Work Performed for: self or parent company, other clients.

Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.

Language(s) in Which Services are Provided: english.

#### **SYDNEY STEEL CORPORATION**

P.O. Box 1450, Sydney, Nova Scotia, B1P 6K5.

##### **Metallurgical Department**

Contact: Mr. B.W. Kokoska, Director of Metallurgy,  
Tel: (902) 564-5471.

Personnel: Total is 20 of which 5 are scientists and engineers.

Activities: Rail research; chemical analysis; metallographic analysis; mechanical testing; ceramics.

Facilities: Hydrogen analyzer; HP 3000 computer; LECO Carbon/S analyzer.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: english.

#### **SYNCRUDE CANADA LTD**

P.O. Box 5790, Station L, Edmonton, Alberta, T6C 4G3.

#### **Syncrude Research and Development**

Admin. Contact: P.J. Bates, Information Spec.,  
Tel: (403) 464-8400.

Scientific Contact: Dr. J.K. Liu, Manager, R&D Services,  
Tel: (403) 464-8452.

Personnel: Total is 250 of which 125 are scientists and engineers.

Activities: Research and Development of Mining of surface mineable oil sands, extraction of the oil from the oil sand ore and upgrading of the recovered heavy oil.

Facilities: Cold room (-40 deg C); materials testing facilities; oil sands extraction pilot plant; bitumen upgrading pilot plants.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: english.

#### **SYNDEL LABORATORIES LTD**

8879 Selkirk Street, Vancouver, British Columbia, V6P 4J6.

##### **Research Unit**

Admin. Contact: J.M. Little, President,  
Tel: (604) 266-7131.

Scientific Contact: S.K. Foo, Sr. Researcher,  
Tel: (604) 266-7131.

Personnel: Total is 3 of which 2 are scientists and engineers.

Activities: Current R&D: Biochemistry - peptide synthesis; natural product extraction, both plant and animal; DNA purification, deoxynucleoside preparation; trace tetracycline derivatives detection; non-mammalian hormones isolation and purification; bone and flesh (fish), uptake of therapeutic drugs; expertise in fish and fish related research; expertise in organic syntheses; expertise in fish and plant toxins (as produced by fish and plants); fish feed components re: palatability and growth for both cold and warm water fish.

Facilities: HPLC (Picogram Detection Analytical and Prep.); liquid scint. counter; freeze dryer; refrigeration; UV/VIS spectrophotometer; electrophoresis.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, testing and analysis.

Language(s) in Which Services are Provided: english.

#### **SYNERLOGIC INC.**

Suite 1300, 635-8th Avenue South West, Calgary, Alberta, T2P 3M3.

##### **Software/Product Development**

Contact: Ken Burnett, Director Development,  
Tel: (403) 237-6500.

Personnel: Total is 15 of which 1 is a scientist or engineer.

Activities: Research and development of AGL and prototyping tools; computer based training product development; expert systems development related to authorising languages and systems.

Facilities: IBM microcomputers.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation.

Language(s) in Which Services are Provided: both english and french.

#### **SYNTEX INC**

2100 Syntex Court, Mississauga, Ontario, L5N 3X4.

#### Research Unit

Admin. Contact: Mel Booth, President,  
Tel: (416) 821-4000.

Scientific Contact: Allen Krantz, Research Director,  
Tel: (416) 821-4000.

Personnel: Total is 20 of which 20 are scientists and engineers.

Activities: Syntax Research (Canada) is engaged in the design of specific enzyme inhibitors targeted for clinically relevant enzymes. This research is of a fundamental nature and involves the design (based on organic and enzyme reaction mechanisms), the synthesis and the testing of novel compounds that block enzyme activity. We are interested broadly in human pharmaceuticals and veterinary medicine.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: english.

#### SYNTRONICS R&D LIMITED

Suite 1100, 80 Bloor Street West, Toronto, Ontario, M5S 2V1.

#### Research Unit

Admin. Contact: John H. Olthoff, General Manager,  
Tel: (416) 927-7277.

Scientific Contact: Mr. Ron Everett, Logicologist,  
Tel: (416) 927-7277.

Personnel: Total is 35 of which 25 are scientists and engineers.

Activities: Advanced Computer Technologies: Multi-Processor Architectures, Three-Dimensional Arrays. Parallel & Concurrent Processing Techniques. Task Distribution/Allocation in 3-D Multi-Processor Systems. Minimum Interconnect/Maximum Communications Strategies. Artificial Intelligence: Expert Systems/Knowledge Engineering. Learning Algorithms. Symbolic Languages. Cellular Computing. Shared Resource/Relational Data Base Management. Acoustics: Wave Form Synthesis Techniques. Algorithmic Music Generation.

Facilities: Computers; Test equipment; Sound equipment; Graphics equipment; Documentation aids.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.

Language(s) in Which Services are Provided: english.

#### SYSTEME ELECTRONIQUE RAYCO LTEE

1370 chemin Filteau, Bémiers, Québec, G0S 1C0.

#### Recherche et développement

Contact: Paul Poulin, Chief Engineer, Tel: (418) 831-6137.

Personnel: Total is 4 of which 2 are scientists and engineers.

Activities: Lifting equipment such as power shovels and cranes are frequently involved in accidents on construction sites. Our work is aimed at developing systems or equipment designed to prevent accidents on the job.

Facilities: Motorola development equipment (6802-6805-6809); basic instrumentation; a fully equipped machining workshop.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: both english and french.

Note: Descriptive text has been translated from French.

#### SYSTEMES SUR MESURE P.B. INC. (LES)

4400 de Salaberry, Montréal, Québec, H4J 1H4.

#### Développement de logiciel

Admin. Contact: Louise Bélanger, Coordinatrice,  
Tel: (514) 334-4531.

Scientific Contact: Pierre Boulay, Président,  
Tel: (514) 334-4531.

Personnel: Total is 4 of which 1 is a scientist or engineer.

Activities: Development of a fourth-generation software package with its own language, which is compatible with most computer systems and facilitates user development of sophisticated applications by means of a powerful tool that is easy to use and eliminates the need to learn a complex programming language.

Facilities: Computers and peripherals; compilers; documentation.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.

Language(s) in Which Services are Provided: both english and french.

Note: Descriptive text has been translated from French.

#### T E S LIMITED

2548 Sheffield Road (P.O. Box 9372), Ottawa, Ontario, K1G 3V1.

#### Research Unit

Contact: Laurin A. Garland, President,  
Tel: (613) 741-9402.

Personnel: Total is 60 of which 25 are scientists and engineers.

Activities: T E S Limited is a Canadian-owned firm, incorporated in 1975 to provide professional engineering services to government and industry. Our demonstrated capabilities include: research and development, testing and monitoring; engineering studies and failure analysis; design services and prototype and low volume production in the following areas: alternative energy systems and conservation techniques, vehicle and related systems, instrumentation, test equipment and data acquisition systems.

Facilities: Computer, DEC LSI 11/23; Mobile Data Acquisition System.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.

Language(s) in Which Services are Provided: english.

#### TANTALUM MINING CORPORATION OF CANADA LTD

P.O. Box 2000, Lac du Bonnet, Manitoba, R0E 1A0.

#### Research Unit

Contact: Mr. R.O. Burt, General Manager,  
Tel: (204) 345-8658.

Personnel: Total is 4 of which 2 are scientists and engineers.

Activities: Mineral processing - gravity concentration methods, industrial minerals flotation.

Facilities: LIV, IR, XRF and A-A analysis equipment; gravity concentration specialized equipment.

Current or Potential Work Performed for: self or parent company, other clients.

Nature of Work Performed for Others: consultation, testing and analysis.

Language(s) in Which Services are Provided: english.

#### TARGA ELECTRONICS SYSTEMS INC

P.O. Box 8485, 3101 Hawthorne Rd, Ottawa, Ontario, K1G 3H9.

#### Research Unit

Admin. Contact: Susan Lemenchick, Director of Finance,  
Tel: (613) 731-9941.

Scientific Contact: Bill Foster, Director of Engineering,  
Tel: (613) 731-9941.

Personnel: Total is 7 of which 4 are scientists and engineers.

Activities: Bubble memory applications technology. Solid state non-volatile memory applications technology. Particular areas of investigation include extension of operating temperature range, reduction of power supply requirements, development of packaging technology to reduce size and increase ruggedness.

Facilities: Temperature chamber; microprocessor development laboratory.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: english.

#### TAYSON INFORMATION TECHNOLOGY INC

275 Cornstock Road, Scarborough, Ontario, M1L 2H2.

##### Tayson Information

Contact: P. Richardson, President, Tel: (416) 288-0550.

Personnel: Total is 3 of which 3 are scientists and engineers.

Activities: Development and research into NAPLPS colour graphic use on microcomputers; the ability to create, store and present via telecommunications the geometric graphic code of the North American presentation level protocol syntax (nee Telidon) from commercially available microcomputers.

Facilities: NAPLPS decoders; NAPLPS frame creation computers.

Current or Potential Work Performed for: self or parent company, other clients.

Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.

Language(s) in Which Services are Provided: english.

#### TECHNICAL PROTRUSION INC

1860 Marie Victorin, St-Bruno de Montarville, Québec, J3V 4P6.

##### Research Unit

Admin. Contact: Jean Dufresne, Président,  
Tel: (514) 653-1731.

Scientific Contact: Robert Dufresne, Directeur de la production, Tel: (514) 653-1731.

Personnel: Total is 2 of which 1 is a scientist or engineer.

Activities: We conduct research to develop pultrusion-based manufacturing processes in order to produce various fiberglass and resin items. We are currently producing about ten different profiles and conducting experiments to produce new forms.

Current or Potential Work Performed for: self or parent company.

Nature of Work Performed for Others: consultation, testing and analysis.

Language(s) in Which Services are Provided: french.

Note: Descriptive text has been translated from French.

#### TECHNO SCIENTIFIC INC.

1-205 Champagne Drive, Downsview, Ontario, M3J 2C6.

##### Research Unit

Contact: Dr. Mirek Macecek, President,  
Tel: (416) 635-7626.

Personnel: Total is 12 of which 8 are scientists and engineers.

Activities: Acoustics, ultrasonics, transducers, sensors, NDE methods, robotics, robotic welding, process control.

Facilities: Robot & vision system; immersion ultrasonics tank; vacuum deposition & photolithography; pulsed welding equipment; crystal cutting and lapping instruments; special electronics for senior evaluation.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.

Language(s) in Which Services are Provided: english.

#### TECHNOSPIN INC.

115 Montpellier Blvd., Montreal, Quebec, H4N 2G3.

##### Technospin Inc. R&D Department

Admin. Contact: M. Olsan, Secretary, Tel: (514) 744-5548.

Scientific Contact: J. Slanik, MSc, BA, P.Eng., President,  
Tel: (514) 744-5548.

Personnel: Total is 8 of which 3 are scientists and engineers.

Activities: Integration of intelligent computers into manufacturing process and machine control; Robotics and computerized motion control; Application of vision systems in manufacturing and testing processes; Field of applications: medical and pharmaceutical - laser technology - defence.

Facilities: Complete precision machining shop; Mechanical and kinematical testing laboratory; Extensive engineering data base and drafting office; Electrical testing and development laboratory, EPROM burning facilities; CAD facilities, finite element analysis capabilities.

Current or Potential Work Performed for: other clients.

Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.

Language(s) in Which Services are Provided: english.

#### TECHWEST, A DIVISION OF FLEET AEROSPACE CORP.

200-7680 River Road, Richmond, British Columbia, V6X 1X6.

##### Research Unit

Admin. Contact: James Wallis, Office Manager,  
Tel: (604) 224-4331.

Scientific Contact: W.D.R. Thomas/D. Roth, Program Mgr.Mech.&Marine/Program Mgr.Elect.Systems,  
Tel: (604) 224-4331.

Personnel: Total is 18 of which 8 are scientists and engineers.

Activities: Mechanical & Marine: application of motion compensation technology to the design of cranes, winches and stabilized platforms; development of advanced systems analysis techniques as applied to the above. Electronics Systems: development of motion sensing and microprocessor control devices for motion compensation systems; development of mobile data acquisition systems.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation.

Language(s) in Which Services are Provided: english.

#### TECRAD INC.

775 avenue St-Jean-Baptiste, Ancienne-Lorette, Québec, G2E 5G5.

##### Research Unit

Contact: Alain Allard, Vice-President Marketing,  
Tel: (418) 871-4137.

Personnel: Total is 18 of which 15 are scientists and engineers.

Activities: Tecrad technology research and development is a company specializing in R&D and, more specifically, in the field of quality control through non-destructive testing. The techniques used include Foucault currents, ultrasound and composite materials. This equipment,

developed entirely by Tecrad, is currently sold worldwide. It is used to detect cracks, the molecular structure of metals, and so forth.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.

Language(s) in Which Services are Provided: both english and french.

Note: Descriptive text has been translated from French.

#### **TEKTRON EQUIPMENT CORPORATION**

230 Arvin Avenue, Stoney Creek, Ontario, L8E 2L8.

##### **Design Division**

Contact: Anthony Tekatch, Design Manager,  
Tel: (416) 662-7820.

Personnel: Total is 4 of which 2 are scientists and engineers.

Activities: Microprocessor applications to industrial control. Applications: refrigeration, green house, water softening, automated testing, steel mill control, furnace control, communications, digital voice, precision plating.

Facilities: Tektronix development system; Gerber CAD system.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation.

Language(s) in Which Services are Provided: english.

#### **TELE-RADIO SYSTEMS LIMITED**

121 Hanlan Rd, Woodbridge, Ontario, L4L 3P5.

##### **Engineering Dept.**

Contact: A.D. Muirhead, V.P. Engineering,  
Tel: (416) 851-2231.

Personnel: Total is 3 of which 2 are scientists and engineers.

Activities: Development of products for the telecommunications and electric power industries.

Current or Potential Work Performed for: self or parent company, other clients.

Nature of Work Performed for Others: contract R&D.

Language(s) in Which Services are Provided: english.

#### **TELEFLEX (CANADA) LTD**

1650 West 2nd Avenue, Vancouver, British Columbia, V6J 1H4.

##### **Servohydraulics**

Admin. Contact: H.G.A. Copping, General Manager,  
Tel: (604) 736-2831.

Scientific Contact: J. McBeth, Engineering Manager,  
Tel: (604) 736-2831.

Personnel: Total is 3 of which 2 are scientists and engineers.

Activities: Computer assisted analysis of dynamics of servo positioning systems with various alternative valve characteristics.

Facilities: Servo cylinder test stand; electronic control equipment; PC computer c/w graphics.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.

Language(s) in Which Services are Provided: english.

#### **TEMFIBRE INC.**

George Petty's Road, Temiscaming, Québec, J0Z 3R0.

##### **Recherche et développement des produits lignosulphanates**

Contact: Dr. A.M. Bialski, Directeur, Recherche et développement du marché, Tel: (819) 627-9505.

Personnel: Total is 6 of which 2 are scientists and

engineers.

Activities: Organic polymer chemistry; wood chemistry; macromolecular chemistry, analysis; physical chemistry; surface physical chemistry - dispersion, adhesion.

Facilities: CPC; HPLC.

Current or Potential Work Performed for: self or parent company, other clients.

Nature of Work Performed for Others: contract R&D.

Language(s) in Which Services are Provided: both english and french.

Note: Descriptive text has been translated from French.

#### **TERRA FOOTWEAR LIMITED**

1 Terra Drive, P.O. Box 436, Markdale, Ontario, N0C 1H0.

##### **Research Unit**

Admin. Contact: J.B. Trentelman, Controller,  
Tel: (519) 986-2881.

Scientific Contact: Paul Torrance, R&D Manager, Pattern Mgr., Tel: (519) 986-2881.

Personnel: Total is 2 of which none are scientists and engineers.

Activities: Injection Moulding - Footwear: Galosh type boot comprised of leather uppers with injected PU soles.

Facilities: Moulds; Dies.

Current or Potential Work Performed for: self or parent company.

Nature of Work Performed for Others: testing and analysis.

Language(s) in Which Services are Provided: english.

#### **THEODOR D. STERLING LTD**

70-1507 W. 12th Avenue, Vancouver, B.C., V6J 2E2.

##### **Environmental and Occupational Health and Epidemiology Group**

Admin. Contact: Elia Sterling, Director, Building Research,  
Tel: (604) 733-2701.

Scientific Contact: Theodor D. Sterling, Ph.D., Director,  
Tel: (604) 733-1348.

Personnel: Total is 14 of which 7 are scientists and engineers.

Activities: 1. Factors relating to human health and comfort including air quality and industrial hygiene surveys. 2. Use of information contained in large scale data bases for design of systems or for policy decisions. 3. Mathematical and statistical evaluation of existing data bases. 4. Development of computer software for 2 & 3 above. 5. Conduct of actual experiments on health and welfare related design problems.

Facilities: Direct access to large main frame university computers; direct access to needed scientific engineering measuring equipment for measuring air quality and ventilation.

Current or Potential Work Performed for: government, other clients.

Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.

Language(s) in Which Services are Provided: english.

##### **Building Science and Technology Group**

Contact: Elia M. Sterling, B.A., B.Arch., Director of Building Research, Tel: (604) 733-2701.

Personnel: Total is 7 of which 4 are scientists and engineers.

Activities: Health and comfort in public office and commercial buildings and residences. Monitoring and evaluation of environmental service systems (eg. ventilation, illumination). Computer storage and analysis of building data using the Building Performance Database. Conducting of field experiments on methods of controlling and abating air quality and other

environmental problems in buildings. Design and retrofit of existing buildings.

Facilities: Work Environment Survey Questionnaire; Building Performance Database; Equipment for measuring indoor air quality, ventilation and thermal conditions.

Current or Potential Work Performed for: government, other clients.

Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.

Language(s) in Which Services are Provided: english.

#### **Computer Analysis Group**

70 - 1507 W. 12th Avenue, Vancouver, British Columbia, V6J 2E2.

Admin. Contact: E.M. Sterling, Research Director, Tel: (604) 733-2701.

Scientific Contact: James J. Weinkam, Ph.D., Director of Computer Systems, Tel: (604) 733-1348.

Personnel: Total is 3 of which 3 are scientists and engineers.

Activities: Development of computer software and data bases; Mathematical and statistical evaluation of data.

Facilities: Micro systems with linkage to mainframe.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: english.

#### **Human Factors and Ergonomics Group**

70 - 1507 W. 12th Avenue, Vancouver, British Columbia, V6J 2E2.

Admin. Contact: E.M. Sterling, Research Director, Tel: (604) 733-2701.

Scientific Contact: Byron Johnson, Staff Scientist, Tel: (604) 733-1348.

Personnel: Total is 4 of which 2 are scientists and engineers.

Activities: Human Factors and Ergonomics related to use of buildings, use of high tech equipment and work stations (eg. VDT, laser scanners) and special problems in hospitals and health care facilities.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.

Language(s) in Which Services are Provided: both english and french.

#### **THERAPEX DIV. E-Z-EM CANADA INC.**

9855 Colbert St., Ville D'Anjou, Québec, H1J 1Z9.

##### **Therapex Inc. - R&D unit**

Admin. Contact: Michèle Lalande, Assistant to President, Tel: (514) 353-5820.

Scientific Contact: Jérémie Tremblay, Scientific Director, Tel: (514) 353-5820.

Personnel: Total is 3 of which 3 are scientists and engineers.

Activities: Development of barium sulfate formulations for gastro-intestinal X-Ray procedures. Development of pharmaceutical and cosmetic formulations.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: testing and analysis.

Language(s) in Which Services are Provided: french.

#### **THOMAS J. LIPTON INC.**

Suite 1500, 160 Bloor Street East, Toronto, Ontario, M4W 3R2.

##### **Technical Services**

307 Orenda Road, Bramalea, Ontario, L6T 1G4.

Contact: Richard C. Shantz, Director of Technical Services, Tel: (416) 793-8250.

Personnel: Total is 12 of which 10 are scientists and engineers.

Activities: Product development - dry food products; canned food products; miscellaneous other food products.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: english.

#### **THOMPSON FOSS INCORPORATED**

5 Montgomery Court, Unionville, Ontario, L3R 2L6.

##### **Computer Systems Research Institute (CSRI) Unit**

2101-10 Kings College Rd; U of T; Sandford Fleming Bldg, Toronto, Ontario, M5S 1A4.

Admin. Contact: R. Wessels, Office Manager, Tel: (416) 978-4921.

Scientific Contact: E.S. Lee, Software Director, Tel: (416) 978-5035.

Personnel: Total is 3 of which 3 are scientists and engineers.

Activities: Computer language design and development; trusted computer operating systems; trusted software design; computer and data system security; data encryption systems.

Facilities: Access to a wide range of CAD equipment and computer systems; Electronics hardware test equipment and support.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation.

Language(s) in Which Services are Provided: english.

##### **Scarborough Unit**

Unit 15, 31A Passmore Avenue, Scarborough, Ontario, M1V 3H3.

Admin. Contact: C. Steele, Office Manager, Tel: (416) 291-1274.

Scientific Contact: W.E. Davidson, General Manager, Tel: (416) 291-1274.

Personnel: Total is 7 of which 4 are scientists and engineers.

Activities: Computer system design; computer aided manufacturing; data communication equipment; microprocessor systems; military applications.

Facilities: Access to a wide range of CAD equipment and computer systems; Electronics hardware test equipment and support; RF Shielded Room.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation.

Language(s) in Which Services are Provided: english.

#### **TIL SYSTEMS LIMITED**

60 Yonge Street, Suite 1100, Toronto, Ontario, M5E 1H5.

##### **Research Unit**

Admin. Contact: Marion Lash, Secretary-Treasurer, Tel: (416) 869-1157.

Scientific Contact: Peter Stevens, Vice-President, Engineering, Tel: (416) 869-1157.

Personnel: Total is 15 of which 10 are scientists and engineers.

Activities: Design of communications computer terminals, specifically for X-25 networks; design of software emulations e.g. IBM 3270, Tektronix, Datagen, Soroc, Teletype, etc.; design of computer systems - customized; design of applications programs - standardized and customized.

Current or Potential Work Performed for: self or parent company, other clients.

Nature of Work Performed for Others: consultation.  
Language(s) in Which Services are Provided: english.

#### **TIL-TEK LIMITED**

P.O. Box 550, Kemptonville, Ontario, K0G 1J0.

##### **Research Unit**

Admin. Contact: S. Tilston, Operations Manager,  
Tel: (613) 258-5928.

Scientific Contact: W.V. Tilston, President,  
Tel: (613) 258-2470.

Personnel: Total is 10 of which 4 are scientists and engineers.

Activities: Antenna interface units (0.1 to 30 Mhz for space shuttle application); communication antenna research and development 100 Mhz-44 Ghz; aircraft antenna R&D - mm wave antennas; navigational antennas; antenna matching transformers 0.1-30 Mhz - low and high power; R.F. high power switches including T/R switches 0.1 Mhz to 44 Ghz; direction finding antennas - 47 to 67 Mhz, L band; E.M. scattering problems, physical OPTICS, GTD and moment method solutions; measurement of em waves including re-radiation measurements; VHF, UHF L band filters and multicouplers; aircraft antennas 20-90 Mhz; military antennas; R.F. switch matrices.

Facilities: H.P. Network Analyzer; R.F. Sweep generators; R.F. bridges; VSWR meters; test antennas; computers.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, testing and analysis.

Language(s) in Which Services are Provided: english.

#### **TILTSCREEN LIMITED**

55 Taber Rd, Unit B, Rexdale, Ontario, M9W 3A7.

##### **Suncap**

Contact: Ron McCurdy, President, Tel: (416) 741-4219.

Personnel: Total is 2 of which 2 are scientists and engineers.

Activities: Solar collector - plastics, Fresnel lens development, electronic radiation for heating plastics.

Facilities: Energy meter; thermoformers.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: consultation, testing and analysis.

Language(s) in Which Services are Provided: english.

#### **TIMBERJACK INC**

925 Devonshire Avenue, Woodstock, Ontario, N4S 7X1.

##### **Technical Services Department**

Admin. Contact: P.H. Whitcomb, Vice President  
Engineering, Tel: (519) 537-6271.

Scientific Contact: V.P. Besenschek, Technical Services Manager, Tel: (519) 537-6271.

Personnel: Total is 70 of which 14 are scientists and engineers.

Activities: Off road vehicle design (forestry equipment development, mining vehicles and specialized utility vehicles and specialized utility vehicles). Field test data acquisition, real time engineering, laboratory testing (stress analysis - static and dynamic, dynamometer testing - HP curves engine cooling systems performance, air conditioner heatload analysis, and engine installations approvals). Certification testing such as ROPS, FOPS, OPS, brake performances to CSA, SAE and ISO requirements. Prototyping and model making for the purpose of evaluation and testing.

Facilities: Field data acquisition - portable; laboratory data acquisition 25 kHz; real time computer (HP1000-A600); proving grounds 30 hectares; testing

room (adjustable mountings) climate controlled 8m wide x 15m long.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.

Language(s) in Which Services are Provided: english.

#### **TIOXIDE CANADA INC.**

1690 Marie Victorin, Tracy, Québec, J3P 5P8.

##### **Tioxide Canada Inc. - Service technique**

Contact: Gratien Label, Surintendant développement,  
Tel: (514) 742-2711.

Personnel: Total is 21 of which 6 are scientists and engineers.

Activities: Development of new titanium dioxide production processes; production of new titanium dioxide pigments; effluent treatment; paint formulation.

Facilities: Electron microscope (Transmission); X-Ray unit, diffraction.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: both english and french.

Note: Descriptive text has been translated from French.

#### **TITAN INFORMATIQUE INC**

Suite 40, 275 St-Jacques ouest, Montréal, Québec, H1Y 1M9.

##### **Research Unit**

Admin. Contact: Richard Desmarais, Président,  
Tel: (514) 288-9628.

Scientific Contact: Yvan Dansereau, Vice président,  
Tel: (514) 727-1645.

Personnel: Total is 4 of which 3 are scientists and engineers.

Activities: Design of microcomputers and associated maps, plans, masks (artwork), prototypes; Operating system (design); Languages (development).

Facilities: CAD.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.

Language(s) in Which Services are Provided: both english and french.

Note: Descriptive text has been translated from French.

#### **TNT DEVELOPMENTS LTD**

Commerce Drive, Steinbach, Manitoba, R0A 2A0.

##### **Research Unit**

Admin. Contact: Mr. Mitch Toews, Vice-President,  
Tel: (204) 326-1186.

Scientific Contact: Mr. Norman Toews, President,  
Tel: (204) 326-1186.

Personnel: Total is 3 of which 1 is a scientist or engineer.

Activities: Manufacture and refinement of process and end product in the production of rigid urethane foam, poured-in-place, sheathed panels for use as a dynamic component in a building, i.e., door, louver, etc.; on-going R&D aimed at product improvement.

Facilities: Manufacturing facility; prototype testing facility.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: english.

#### **TORCAN CHEMICAL LTD**

P.O. Box 308, 110 Industrial Parkway North, Aurora, Ontario, L4G 1X9.

**Research Unit**

Contact: Dr. R. Kubela, President, Tel: (416) 727-9417.  
Personnel: Total is 11 of which 8 are scientists and engineers.  
Activities: Pharmaceutical chemistry.  
Current or Potential Work Performed for: self or parent company.  
Language(s) in Which Services are Provided: english.

**TORCHINSKY CONSULTING (1976) LTD**

310 Athabasca Ave, Sherwood Park, Alberta, T8A 3X7.

**Research Unit**

Contact: Gabe Rohr, Branch Manager,  
Tel: (403) 464-4550.  
Personnel: Total is 5 of which 5 are scientists and engineers.  
Activities: Highway and road engineering and design.  
Facilities: In-house computer for design work; terminal to mainframe computer for design work.  
Current or Potential Work Performed for: other clients.  
Nature of Work Performed for Others: contract R&D.  
Language(s) in Which Services are Provided: english.

**TRANS-CANADA RESOURCES LTD**

200, 708-11 Ave S.W., Calgary, Alberta, T2R 0E4.

**Research and Development Division**

208, 601-17 Ave S.W., Calgary, Alberta, T2S 0B3.

Contact: Mr. Dan Williamson, Manager; R&D,  
Tel: (403) 231-9425.

Personnel: Total is 10 of which 6 are scientists and engineers.

Activities: Trans-Canada Resources Research and Development is engaged primarily in study of products and systems used in oil and gas well drilling fluids. However, we are also engaged in corrosion research, heavy oil recovery and drilling fluids solids control work.

Facilities: High temperature/high pressure filtration unit; high temperature/high pressure viscometer; particle size analysis.

Current or Potential Work Performed for: self or parent company, other clients.

Nature of Work Performed for Others: consultation, testing and analysis.

Language(s) in Which Services are Provided: english.

**TRENCH ELECTRIC**

71 Maybrook Drive, Scarborough, Ontario, M1V 2L5.

**Trench Electric Coil Division R&D Dept.**

Admin. Contact: M. Stedman, Director,  
Tel: (416) 298-8108.

Scientific Contact: R. Dudley, Chief Engineer,  
Tel: (416) 298-8108.

Personnel: Total is 8 of which 7 are scientists and engineers.

Activities: Basic research and development engineering (coil product development) basic technical areas are: materials research (aging studies, static and dynamic performance), losses (measurement and circulation), fields analysis, mechanical-structural, computer aided simulation, power system performance (eg. RI filter design and development), coupled circuit analysis, high voltage research, research on insulation systems, conductors research (conductor systems for aircore coils), manufacturing process R&D.

Facilities: Instron; high voltage tracking wheel; high voltage impulse generators up to 3 mv; low voltage high capacity impulse generator; power lab up to 50 mva (20kv); environmental chambers and thermal aging ovens; corona room; high frequency inverter; high frequency and power frequency loss measurement.

Current or Potential Work Performed for: self or parent company, government.

Nature of Work Performed for Others: consultation, testing and analysis.

Language(s) in Which Services are Provided: english.

**TRI-TEC GROWTH SYSTEMS INC. (SASKATOON)**

P.O. Box 7343, Saskatoon, Saskatchewan, S7K 4J3.

**Research Unit**

Contact: G.H. Green, Manager, Tel: (306) 373-1844.

Personnel: Total is 2 of which 2 are scientists and engineers.

Activities: Analysis of economics of waste heat in greenhouses; Research and Development in - utilization of waste heat in the form of gases (patented system), energy conversion in greenhouses with insulating blanket - move is able within inflated layers of poly over greenhouses; Specialization of heating systems and energy conversion in greenhouses.

Current or Potential Work Performed for: self or parent company, government.

Nature of Work Performed for Others: consultation.

Language(s) in Which Services are Provided: english.

**TRIDEX SYSTEMS INC.**

Suite 202, 190 Colonnade Road, Nepean, Ontario, K2E 7J5.

**Technical Staff**

Contact: C.V.W. Armstrong, President, Tel: (613) 727-5255.

Personnel: Total is 6 of which 6 are scientists and engineers.

Activities: Computer systems research and development, particularly parallel processing and fault-tolerant systems for special-purpose applications including high-speed data acquisition, digital signal processing, image processing and military command and control.

Current or Potential Work Performed for: government.

Nature of Work Performed for Others: contract R&D.

Language(s) in Which Services are Provided: english.

**TRIDON LIMITED**

201 North Service Road, Burlington, Ontario, L7R 4A2.

**Advanced Development - Electronic Devices**

Contact: H. Kassfelt, Manager Advanced Development, Electronic Devices, Tel: (416) 632-8900.

Personnel: Total is 5 of which 3 are scientists and engineers.

Activities: Design of automotive electronic modules for mass production; design and implementation of flexible automation systems; design of control systems to support manufacturing requirements.

Language(s) in Which Services are Provided: english.

**R&D, Wipers**

2190 South Service Road W., Oakville, Ontario, L6L 5T8.

Admin. Contact: Larry Birch, V.P., Wiper Operations,  
Tel: (416) 825-1222.

Scientific Contact: John Kirkegaard, Manager, R&D,  
Tel: (416) 825-1222.

Personnel: Total is 5 of which 3 are scientists and engineers.

Activities: Development formulation and specification compounding of rubber stocks; testing of rubber and plastics compositions for rheological, physical and performance properties. Field of specialization: technology of precision profile extrusion of elastomers and engineering resins.

Facilities: Ozone chamber; X-ray spectrometer; tensile tester with IR extensometer; IRHD and Shore "A" hardness testers; ODR and MPT rheometers; lab rubber compounding facilities.

Current or Potential Work Performed for: self or parent company, other clients.

Nature of Work Performed for Others: testing and analysis.

Language(s) in Which Services are Provided: english.

#### **Advanced Development - Mechanical Products**

Contact: Frank Johnson, Manager Advanced Development, Mechanical Products, Tel: (416) 632-8900.

Personnel: Total is 6 of which 3 are scientists and engineers.

Activities: Design of mechanical devices to complement the hose clamp produce line. Metallurgical test lab: metalography, mechanical performance testing, vibration test stand, salt spray testing of coating. Design and build of special purpose machinery and tooling for high volume production of small metal parts.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: english.

#### **TRIGRAPH INC**

5 Lower Shelbourne Street, Toronto, Ontario, M5A 2P3.

##### **Information Services**

Contact: Edward Hale, Vice President, Tel: (416) 363-8841.

Personnel: Total is 5 of which 4 are scientists and engineers.

Activities: Computerized text processing and text formatting software.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: english.

#### **TRILLIUM TELEPHONE SYSTEMS INC.**

603 March Road, Kanata, Ontario, K2K 1X3.

##### **Research Unit**

Admin. Contact: Graham A. Neathway, President, C.E.O., Tel: (613) 592-2550.

Scientific Contact: Ron MacKinnon, Director, Engineering, Tel: (613) 592-2259.

Personnel: Total is 112 of which 8 are scientists and engineers.

Activities: Research and development on key telephones with 1 - 19 outside lines. Area of specialization includes integrated circuits.

Current or Potential Work Performed for: self or parent company.

Nature of Work Performed for Others: testing and analysis.

Language(s) in Which Services are Provided: both english and french.

#### **TRIPLE CROWN ELECTRONICS INC**

4560 Fieldgate Drive, Mississauga, Ontario, L4W 3W6.

##### **Research Unit**

124 Belfield Road, Rexdale, Ontario, M9W 1G1.

Admin. Contact: Charles Evans, President, Tel: (416) 629-1111.

Scientific Contact: Karl Poirier, Vice-President - Engineering, Tel: (416) 241-2651.

Personnel: Total is 12 of which 6 are scientists and engineers.

Activities: Radio frequency signal processing and amplification for TV and FM receiver and distribution application in the VHF, UHF and microwave bands.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: english.

#### **TROJAN TECHNOLOGIES INC**

845 Consortium Court, London, Ontario, N6E 2S8.

##### **Research Unit**

Admin. Contact: David Holden, Controller, Tel: (519) 685-6660.

Scientific Contact: G. Elliott Whitby, Micro Biologist, Tel: (519) 685-6660.

Personnel: Total is 2 of which 2 are scientists and engineers.

Activities: Research of the use of high intensity ultra violet lamps as a means of sterilizing water and other liquids. Other means of sterilization such as chemical means in conjunction with UV; dionization will be researched as well.

Current or Potential Work Performed for: self or parent company.

Nature of Work Performed for Others: contract R&D, consultation.

Language(s) in Which Services are Provided: english.

#### **TURBO RESOURCES LIMITED, LUBRICANTS MARKETING DIVISION**

9570 58 Avenue, Edmonton, Alberta, T6E 0B6.

##### **Turbo Lubrefinery, Technical Services**

Contact: Dr. D. Cameron, Technical Administrator, Tel: (403) 468-5087.

Personnel: Total is 2 of which 2 are scientists and engineers.

Activities: Used lube oil re-refining; product development based on re-refined base oils; recycling of waste materials.

Current or Potential Work Performed for: self or parent company, other clients.

Nature of Work Performed for Others: testing and analysis.

Language(s) in Which Services are Provided: english.

#### **TURBOTAK INC.**

323 Grant Crescent, Waterloo, Ontario, N2K 2A3.

##### **Research Unit**

200 University Avenue West, Waterloo, Ontario, N2L 3G1.

Admin. Contact: E.F. Spink, Manager, Tel: (519) 885-1211.

Scientific Contact: D.R. Spink, Treasurer, Tel: (519) 885-1211.

Personnel: Total is 5 of which 5 are scientists and engineers.

Activities: Development of wet scrubbing technology for the control of a particulate and gaseous air pollutant. Development of air atomizing spray nozzles, metallurgical research.

Facilities: 1000 cfm pilot scrubber; 1000 cfm portable scrubber.

Current or Potential Work Performed for: self or parent company.

Nature of Work Performed for Others: contract R&D, testing and analysis.

Language(s) in Which Services are Provided: english.

#### **ULTRA LASERTECH INC.**

6415-2 Viscount Road, Mississauga, Ontario, L4V 1K8.

##### **Research Unit**

Contact: R.A. Crane, President, Tel: (416) 677-8091.

Personnel: Total is 8 of which 5 are scientists and engineers.

Activities: CO2 Lasers, sealed-off, to 100 watts; CO2 waveguide lasers; ceramic and glass laser structure designs; laser systems - communications, radar, lidar, etc.; industrial laser applications; high power laser modelling and design; laser based photoacoustic detectors and systems; atmospheric studies; manufacturing processes - ceramic to ceramic, ceramic to metal, ceramic to glass sealing - high temperature hard seals; wavelength tunable CO2 lasers and automatic control; far infrared lasers; CO lasers.

Facilities: CO2 Lasers; high temperature sealing facilities; power supplies; photoacoustic equipment; tunable, high power lasers (CO2); electronic processing gear, etc.  
Current or Potential Work Performed for: self or parent company, government.  
Nature of Work Performed for Others: contract R&D.  
Language(s) in Which Services are Provided: english.

#### **UMA ENGINEERING LTD.**

1700-1066 W. Hastings Street, Vancouver, British Columbia, V6E 3X2.

##### **Umatac Industrial Processes**

Admin. Contact: K. Pitt, Branch Controller,  
Tel: (403) 283-8474.

Scientific Contact: William Taciuk, General Manager,  
Tel: (403) 279-8080.

Personnel: Total is 22 of which 11 are scientists and engineers.

Activities: Extraction of crude oil from tar sands.  
Current or Potential Work Performed for: government.  
Nature of Work Performed for Others: contract R&D.  
Language(s) in Which Services are Provided: english.

#### **UNIES LTD.**

1666 Dublin Avenue, Winnipeg, Manitoba, R3H 0H1.

##### **Research Unit**

Contact: Gary Proskiw, P.Eng., Director, Mechanical Engineering, Tel: (204) 633-6363.

Personnel: Total is 9 of which 6 are scientists and engineers.

Activities: Energy conservation research test; monitoring and evaluation equipment design; product development.

Facilities: Blower door.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.

Language(s) in Which Services are Provided: english.

#### **UNIROYAL GOODRICH CANADA INC.**

180 King St. S. P.O. 1626, Waterloo, Ontario, N2J 4P3.

##### **Uniroyal Research Laboratories**

120 Huron Street, Guelph, Ontario, N1H 6N3.

Contact: B.A. Graham, Director R&D,  
Tel: (519) 822-3790.

Personnel: Total is 58 of which 34 are scientists and engineers.

Activities: Organic chemistry - discovery of new pesticides and process development. Physical chemistry - formulation of pesticide products. Polymer chemistry - rubber compounding, polymer additives composites. Analytical chemistry - separation and identification of organic compounds. Polymer physics - properties of polymeric materials, adhesion. Mathematics - application of statistics to process improvement, etc.

Facilities: Filament winder; chemical pilot plant.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, testing and analysis.

Language(s) in Which Services are Provided: english.

##### **Tire Division Technical Department**

149 Strange Street, Kitchener, Ontario, N2G 1R5.

Contact: T.L. Powell, Technical Director,  
Tel: (519) 749-4722.

Personnel: Total is 26 of which 4 are scientists and engineers.

Activities: Tire design; tire construction and assembly methods; materials primarily for rubber compounds; textile developments for special applications e.g. nylon, polyester, aramid and steel; materials for tire retreading.

Facilities: Tire test wheels; force and moment machine; rolling resistance machine; X-Ray for tires; plunger and bead unseating testers.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: english.

#### **UNITRON INDUSTRIES LTD**

20 Beasley Drive, P.O. Box 9017, Kitchener, Ontario, N2G 4J3.

##### **Research Unit**

Contact: Dr. H. Arndt, Director, Research and Development, Tel: (519) 893-6800.

Personnel: Total is 16 of which 8 are scientists and engineers.

Activities: All research and development required for the design and development of hearing aids. Specific areas of expertise: acoustic measurements; electronic design (analog); transducer evaluation (microphones, receivers); printed circuit board manufacture; miniaturized electronic components packaging; surface mount technology; automated test equipment; audiometric evaluation.

Facilities: Anechoic chamber; Knowles electronic mannequin for acoustic research (KEMAR); audiometric test facility; hearing aid measurement equipment.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: english.

#### **UNIVERSAL SYSTEMS LTD**

P.O. Box 3391, Station B, Fredericton, New Brunswick, E3B 5H2.

##### **Research Unit**

Admin. Contact: S.E. Masry, President,  
Tel: (506) 458-8533.

Scientific Contact: Mr. T. McCarthy, Application Engineer,  
Tel: (506) 457-0823.

Personnel: Total is 6 of which 6 are scientists and engineers.

Activities: The Company carries out its R&D in digital mapping and the use of mapping data in Land Information Systems and Geographic Information Systems with applications in the following areas: Utilities, Hydrographic charting and navigation, Resources planning, Geographical statistics, and Agricultural planning.

Facilities: Mini control equipment; High-Resolution Graphics CRT; Mini and Micro computers.

Current or Potential Work Performed for: self or parent company, government.

Nature of Work Performed for Others: contract R&D, testing and analysis.

Language(s) in Which Services are Provided: english.

#### **UNOCAL CANADA LTD.**

P.O. Box 999, 335 8th Avenue South West, Calgary, Alberta, T2P 2K6.

##### **Heavy Oil**

Contact: Mr. Fritz H. Perschon, Manager, Heavy Oil,  
Tel: (403) 268-0331.

Personnel: Total is 10 of which 6 are scientists and engineers.

Activities: Recovery of heavy oil or bitumen from Grosmont carbonate reservoir utilizing steam injection.

Facilities: Field pilots.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: english.

**URBAN TRANSPORTATION DEVELOPMENT CORPORATION LIMITED**

2 St. Clair Ave W., 8th floor, Toronto, Ontario, M4V 1L7.

**UTDC Research and Development Limited**

P.O. Box 160, Station A, Kingston, Ontario, K7M 6R1.

Contact: Brian B. Caldwell, Executive Vice-President,  
Tel: (613) 384-3100.

Personnel: Total is 40 of which 26 are scientists and engineers.

Activities: Design, build and test steerable trucks for transit applications; develop retrofit kits to improve performance of existing trucks both transit and freight; design, build and test linear induction motors; design advanced road and rail vehicles; test alternative fuels in diesel engines; total rail transit vehicle and subsystem design; total rail freight vehicle and subsystem design; people moving systems development; materials transportation systems development; civil systems (guideways, tunnels) development.

Facilities: Powered and non-powered transit vehicle test trucks; transit test vehicles; LIM static test rig; LIM dynamic test rig; transporter test track; engine test bed; computer with data analysis, modelling and simulation capability.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.

Language(s) in Which Services are Provided: english.

**VALAC INC**

C.P. 730, 1167 route 243, Valcourt, Québec, J0E 2L0.

**Research Unit**

Admin. Contact: Pauline Véronneau, Controller,  
Tel: (514) 532-3484.

Scientific Contact: François Blais, Ingénieur, R-D,  
Tel: (514) 532-3484.

Personnel: Total is 2 of which 2 are scientists and engineers.

Activities: Research deals primarily with the improvement of products produced by Valac Inc and, particularly, the development of new agricultural products.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: french.

Note: Descriptive text has been translated from French.

**VANCOUVER PETROGRAPHICS LTD**

8887 Nash Street, Fort Langley, British Columbia, V0X 1J0.

**Research Unit**

Contact: James Vinnell, President, Tel: (604) 888-1323.

Personnel: Total is 4 of which none are scientists and engineers.

Activities: Preparation of polished petrographic thin sections for electron microprobe study.

Facilities: Logitech thin section machine; Buehler polishing system.

Current or Potential Work Performed for: government.

Nature of Work Performed for Others: contract R&D.

Language(s) in Which Services are Provided: english.

**VANSO ELECTRONICS LTD.**

661 Century St, Winnipeg, Manitoba, R3H 0L9.

**Research Unit**

Contact: Ed Van Humbeck, President, Tel: (204) 775-8831.

Personnel: Total is 9 of which 6 are scientists and engineers.

Activities: Agricultural and vehicular instrumentation and controls; scientific instrumentation and controls; local area networks for industrial and scientific applications.

Facilities: Microprocessor development systems for Motorola and Intel processors; test facilities to Society of Automotive Engineering specs.; network of personal computers for engineering staff.

Current or Potential Work Performed for: self or parent company, other clients.

Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.

Language(s) in Which Services are Provided: english.

**VARTA BATTERIES LTD**

2 Lansing Square, Suite 601, Willowdale, Ontario, M2J 4P8.

**Automotive Battery Development Group**

1290 Bellamy Road North, Scarborough, Ontario, M1H 1H8.

Contact: E.A. Atkinson, Director, Engineering,

Tel: (416) 494-1457.

Personnel: Total is 6 of which 3 are scientists and engineers.

Activities: Electrical performance of lead-acid cells.

Facilities: Battery test equipment.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: english.

**VENMAR INC.**

1715 Haggerty Street, Drummondville, Québec, J2C 5P7.

**Research Department**

Contact: Ky Xuan To, Director of R&D,

Tel: (819) 477-6226.

Personnel: Total is 5 of which 3 are scientists and engineers.

Activities: Residential Ventilation: fluid mechanics and thermodynamic, conservation of energy and management of energy.

Facilities: System Development; Data acquisition; Personal computer

Current or Potential Work Performed for: self or parent company.

Nature of Work Performed for Others: testing and analysis.

Language(s) in Which Services are Provided: both english and french.

**VERITAS SOFTWARE LTD.**

615 3rd Avenue South West, Calgary, Alberta, T2P 0G6.

**Research Unit**

Admin. Contact: Mike Galbraith, President,

Tel: (403) 262-5538.

Scientific Contact: Dan Hampson, V.P., R&D,

Tel: (403) 262-5538.

Personnel: Total is 15 of which 12 are scientists and engineers.

Activities: Development of algorithms and methods used in geophysical exploration. In particular, seismic data processing. Development of computer programs to perform such functions as: refraction statics analysis; migration and forward wave equation modelling; deconvolution - spike, zero phase, multi-channel, maximum likelihood; inversion; vertical seismic profile research; offset VSP's 1-D, 2-D and 3-D inversion using tomographic techniques; development of user oriented interactive graphics applications on micro-computers.

Facilities: Mainframe computers - VAX 11/785; micros - IBM PC's, Microvax, 11/750; array processors; graphics screens; plotters.

Current or Potential Work Performed for: self or parent company, other clients.

Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.

Language(s) in Which Services are Provided: both english and french.

#### **VERSATILE FARM EQUIPMENT COMPANY**

1260 Clarence Avenue, Winnipeg, Manitoba, R3T 1T3.

##### **Research Unit**

Admin. Contact: W. Koch, Mgr., STDS/Admin.,  
Tel: (204) 477-2367.

Scientific Contact: Mr. H. Crawley, Chief Engineer,  
Tel: (204) 477-2353.

Personnel: Total is 135 of which 15 are scientists and engineers.

Activities: Farm Equipment - tractors, swathers, combines, etc.

Facilities: CAD/CAM computer system; test trac; electronic/mech. test equipment; prototype units.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: english.

#### **VERSATILE NOBLE CULTIVATORS COMPANY**

P.O. Box 60, Nobleford, Alberta, T0L 1S0.

##### **Research Unit**

Contact: Mr. Simon Hann, Manager, Research & Development, Tel: (403) 824-3711.

Personnel: Total is 14 of which 4 are scientists and engineers.

Activities: Tillage, seeding and fertilizing equipment for dryland agriculture.

Facilities: Soil Bin (10' x 60').

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: english.

#### **VIA PAX CORPORATION LIMITED**

R.R. #2, Brampton, Ontario, L6V 1A1.

##### **Research Unit**

Admin. Contact: Don D. Rowntree, President,  
Tel: (416) 846-4500.

Scientific Contact: Robert B. Stubbings, DVM, Technical Director, Tel: (416) 846-4500.

Personnel: Total is 2 of which 2 are scientists and engineers.

Activities: EMBRYO TRANSFER: methods of freezing and thawing embryos to increase success rate; methods of superovulation of donor animals to increase number of embryos recovered per flush; micromanipulation of embryos - splitting of embryos into two halves for transfer, increasing the number of pregnancies obtained from the embryos.

Facilities: Micromanipulator; Planar model R204 cell freezer.

Current or Potential Work Performed for: self or parent company, government.

Language(s) in Which Services are Provided: english.

#### **VIATEC RESOURCE SYSTEMS INC.**

#114, 6815-8th Street N.E., Calgary, Alberta, T2E 7H7.

##### **Research Unit**

Contact: Michael J. McKinnon, General Manager,  
Tel: (403) 275-6702.

Personnel: Total is 20 of which 15 are scientists and engineers.

Activities: Development of custom proprietary hardware and software. Areas of specialization include - advanced signal processing techniques (both hardware and software) to improve detectability of icebergs with marine radars; application of acoustic emission technology on a variety of applications to enable continuous structural integrity monitoring of large

structures such as pipelines, pressure vessels, offshore structures; application of microprocessor based technology to maximize production in heavy oil operations.

Facilities: Radar Digitizer; Iceberg Software Models; Intelligent A.E. Monitoring Unit; PDP 11/23 Computer; Various PC's; Various pieces of lab equip.-logic analyzers, etc.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.

Language(s) in Which Services are Provided: english.

#### **VIBRON LIMITED**

1720 Meyerside Drive, Mississauga, Ontario, L5T 1A3.

##### **Vibron Limited - Engineering Services Group**

Admin. Contact: Dr. D.L. Allen, President,  
Tel: (416) 677-4922.

Scientific Contact: Dr. R. Ramakrishnan, Manager, Engineering Services, Tel: (416) 677-4922.

Personnel: Total is 4 of which 4 are scientists and engineers.

Activities: 1. Field of specialization - noise and vibration analysis and control. 2. R&D performed: i) analysis development and design of vibration isolation/earthquake restraint; ii) analysis and design of vibration isolation of presses and other impulse machines; iii) development of silencers, mufflers and pulse dampers to control noise and pressure pulses; iv) development and design of vibration control products; v) design and development of Tuned Mass Dampers - for CN Tower, tall stacks, etc.

Facilities: Complete noise and vibration measurement and analysis equipment; real-time analyzers; computers; plotters.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.

Language(s) in Which Services are Provided: english.

#### **VORTEK INDUSTRIES LTD**

1820 Pandora Street, Vancouver, British Columbia, V5L 1M5.

##### **Research Unit**

Contact: Dr. D.M. Camm, Director of R&D,  
Tel: (604) 251-2451.

Personnel: Total is 4 of which 2 are scientists and engineers.

Activities: Vortek designs, develops, manufactures and markets the most powerful continuous light sources on earth. R&D is aimed at development of ultra-power arc lamps and optical irradiation systems for industrial and scientific use. Areas of specialization include: fabrication techniques for liquid-cooled tungsten electrodes, engineering of high-power optical systems, development of optical design and fabrication techniques for reflector assemblies, development of power control and digital operating systems for plasma arc lamps.

Facilities: Research lamp facility; RF induction casting facility; spectral analysis facility; optical design software.

Current or Potential Work Performed for: self or parent company, other clients.

Nature of Work Performed for Others: consultation, testing and analysis.

Language(s) in Which Services are Provided: english.

#### **WABCO STANDARD INC.**

P.O. Box 2050, Hamilton, Ontario, L8N 3T5.

#### Research Unit

Contact: P.J. Flynn, Manager, Eng. Research & Quality Assurance, Tel: (416) 561-8700.

Personnel: Total is 15 of which 8 are scientists and engineers.

Activities: R&D work in general is related to the railroad industry. Work at WABCO Ltd tends to specialize in hydraulics although other areas are also investigated.

Facilities: Environmental room; pneumatic and hydraulic testing equipment and recorders.

Current or Potential Work Performed for: self or parent company, other clients.

Nature of Work Performed for Others: contract R&D.

Language(s) in Which Services are Provided: english.

#### WARNER SHELTER CORPORATION

150 East 1st Avenue, Vancouver, British Columbia, V5T 1A4.

#### Research Unit

Contact: G.A. Warner, President, Tel: (604) 876-1619.

Personnel: Total is 10 of which 3 are scientists and engineers.

Activities: Fabric structure technology; computer patterning and force analysis of fabric structure technology.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: english.

#### WARNER-LAMBERT CANADA INC.

2200 Eglinton Avenue East, Scarborough, Ontario, M1L 2N3.

#### Research Unit

Admin. Contact: D.M. Seath, President, Parke-Davis Canada Inc., Tel: (416) 288-2447.

Scientific Contact: Eric Blaser, Director, Research/Business Development, Tel: (416) 288-2051.

Personnel: Total is 30 of which 24 are scientists and engineers.

Activities: Product Development - prescription and O.T.C. pharmaceuticals; Process Development - pharmaceuticals; Basic Research - antacids.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D.

Language(s) in Which Services are Provided: english.

#### WASHBURN AND GILLIS ASSOCIATES LTD

404 Queen Street, Fredericton, New Brunswick, E3B 1B6.

#### Research Unit

Admin. Contact: G. F. Gillis, Vice-President, Tel: (506) 458-1000.

Scientific Contact: Donald Townsend, Senior Biologist, Tel: (506) 458-1000.

Personnel: Total is 2 of which 1 is a scientist or engineer.

Activities: Study of effects of environmental changes on fish behaviour and growth in natural ecosystems and in aquaculture operations. Fisheries research on sublethal and lethal effects of acid rain, heavy metals, industrial effluents and pesticides; and modifications to aquaculture operations promoting enhanced fish growth and condition.

Facilities: Large laboratory stream aquaria.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.

Language(s) in Which Services are Provided: english.

#### WATERLOO CENTRE FOR PROCESS DEVELOPMENT

University of Waterloo, Waterloo, Ontario, N2L 3G1.

#### Research Unit

Admin. Contact: E.B. Cross, Executive Director, Tel: (519) 888-4058.

Scientific Contact: Dr. E. Rhodes, Director, Tel: (519) 885-1211.

Personnel: Total is 60 of which 55 are scientists and engineers.

Activities: Contract research in all phases of chemical engineering including process development and computer aided process control. Pilot plant or prototype development of technologies through a demonstration phase to the point where industry can select and evaluate technology and license the rights for full commercialization.

Facilities: Pilot plants for various chemical engineering processes; Industrial training facilities for classes of 20-25 to learn computerized process control applications.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.

Language(s) in Which Services are Provided: english.

#### WATERSHED ENERGY SYSTEMS LTD

97 Six Point Road, Toronto, Ontario, M8Z 2X3.

#### Research Unit

Contact: Douglas Hart, President, Tel: (416) 233-3241.

Personnel: Total is 4 of which 3 are scientists and engineers.

Activities: Solar collectors, absorption cooling and solar refrigeration, thin film solar collectors, solar monitoring and control devices, analysis of thermal processes, feasibility analysis of energy retrofit in existing buildings, energy efficient building design, energy efficient mechanical engineering, energy product design, heat transfer materials and systems, building thermostat design and development, energy monitoring systems (microprocessor based) for energy management and control, energy efficient window systems, use of honeycomb convection suppressors in windows, use of infrared reflecting films in windows, water heating heat pumps, dehumidification of indoor pool enclosures.

Facilities: Convection oven; compressor; air tools; metering equipment (electrical, pH, numerous sensors and flow control devices); air balancing equipment; on-line computer terminal; roll forming equipment for fabrication electric tools; fork lift; drill presses (2); welding equipment; web handling equipment (pneumatic); acid handling tanks, aluminum cutting and forming.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation.

Language(s) in Which Services are Provided: english.

#### WEISER INC

6700 Beresford Street, Burnaby, British Columbia, V5E 1Y2.

#### Product Engineering

Admin. Contact: L.R. Hughes, Planning & Development Manager, Tel: (604) 526-3641.

Scientific Contact: D.P. Potter, Product Engineering Manager, Tel: (604) 526-3641.

Personnel: Total is 8 of which 4 are scientists and engineers.

Activities: Design door lock and latch mechanisms, primarily mechanical but including some electronics; develop styling and ergonomic features; participate with

industry and government in development of performance standards.

Facilities: Custom electro/mechanical testing devices; standard force gauges; model shop equipped with standard machine tools.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: english.

#### **WELLSDALE RESEARCH LIMITED**

6912-82nd Avenue, Edmonton, Alberta, T6B 0E7.

##### **Research Unit**

Admin. Contact: Marlene Sponagle, Manager,

Tel: (403) 468-1761.

Scientific Contact: Robert Grauman, President,

Tel: (403) 468-1761.

Personnel: Total is 7 of which 4 are scientists and engineers.

Activities: Design and development of stand alone power systems; automatic weather stations; pipeline control systems; computer software development; automatic hydrological systems; electronic power regulation and control devices for such things as lightning detection, wind power systems, irrigation control systems, pump monitoring, photovoltaic power systems. Custom electronic design, small scale low head water turbine systems.

Facilities: Custom, precision machine shop; electronics laboratory; portable design and testing facility; portable computer design facility.

Current or Potential Work Performed for: government, other clients.

Nature of Work Performed for Others: contract R&D, consultation.

Language(s) in Which Services are Provided: english.

#### **WESTBAY INSTRUMENTS LTD**

507 East Third Street, North Vancouver, British Columbia, V7L 1G4.

##### **Research Unit**

Admin. Contact: W.K. Patton, Vice-President,

Tel: (604) 984-4215.

Scientific Contact: F.D. Patton, President,

Tel: (604) 984-4215.

Personnel: Total is 7 of which 5 are scientists and engineers.

Activities: Mechanical and electronic design of instrumentation for measuring water pressure and taking water samples in deep drillholes and/or in hazardous materials. Involves work on strength of materials, pressure testing, cast polyurethane elastomers for packers, electronic design of data acquisition equipment.

Facilities: Pressure chambers to 2000 psi; temperature chamber (range -40 degrees C to 250 degrees C); pressure transducer calibration equipment - 0-100 psi to + or - .025% F.S.; pressure transducer calibration equipment 0-2000 psi + or - 0.1% F.S.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation.

Language(s) in Which Services are Provided: english.

#### **WESTINGHOUSE CANADA INC.**

PO Box 510, 120 King St W, 6th Floor, Hamilton, Ontario, L8N 3K2.

##### **Transformer Department - Electrical Development Section**

1632 Burlington Street East, Hamilton, Ontario, L8N 3K2.

Admin. Contact: J.L. Harbell, Plant Manager,

Tel: (416) 528-8811.

Scientific Contact: P.V. Birke, Section Engineer, Electrical

Development, Tel: (416) 528-8811.

Personnel: Total is 4 of which 3 are scientists and engineers.

Activities: Electromagnetic field analysis; dielectric and magnetic field testing; design optimization - nonlinear and geometric programming; numerical and statistical analysis; CAE/CAD philosophy.

Facilities: Engineering computer; EHV test equipment; load loss precision bridge; stray loss measurement apparatus; dielectric oil test equipment.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: english.

##### **Turbine & Generator Division, Product Reliability**

###### **Department**

P.O. Box 510, Milton Avenue, Hamilton, Ontario, L8N 3K2.

Admin. Contact: R.B. Hall, Manager of Product Reliability, Tel: (416) 528-8811.

Scientific Contact: K.P. Willett, Manager of Metallurgical Section, Tel: (416) 528-8811.

Personnel: Total is 19 of which 8 are scientists and engineers.

Activities: Gas and steam turbine materials, processes and performance.

Facilities: Metallurgical laboratory; chemical laboratory; mechanical, vibration and electronics laboratory; hot isostatic press; S.E.M. computerized facility to access and analyse historical and real time data.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: english.

##### **Contract Engineering of Nuclear Products Department**

1632 Burlington Street East, Hamilton, Ontario, L8N 3K2.

Contact: F. Stern, Manager, Tel: (416) 528-8811.

Personnel: Total is 37 of which 17 are scientists and engineers.

Activities: Qualification and performance testing of components and systems; fabrication and testing of nuclear fuel pin simulators; mathematical modelling and data analysis; design and fabrication of specialized equipment for testing; large scale thermal hydraulic testing - critical heat flux testing of multi-pin assemblies, pressure drop measurements, two-phase jet impingement and rapid depressurization measurements, endurance testing for fretting studies of fuel strings.

Facilities: High speed data acquisition and control system (250" ch); 5 MW variable power supply; high pressure (>12 MPa) test loops; instrumentation for temp. press. flow, etc.; high pressure test boiler; large (8' dia. x 20') environmental test chambers.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.

Language(s) in Which Services are Provided: english.

##### **Product and Materials Development, Nuclear Products**

###### **Department**

Dorset Street East, Port Hope, Ontario, L1A 3V4.

Admin. Contact: H.R. Debnam, Manager, Nuclear Products Department, Tel: (416) 885-4537.

Scientific Contact: N.A. Graham, Manager, Product & Materials Dev., Tel: (416) 885-4537.

Personnel: Total is 17 of which 7 are scientists and engineers.

Activities: Materials and manufacturing processes development projects in support of nuclear fuel products. Includes metal working, forming, heat treatment, welding, brazing, UO<sub>2</sub> ceramics pellet compaction and sintering. Specialities: Zirconium

metallurgy, high temperature/pressure water and steam corrosion testing, fusion and resistance welding of zirconium alloys, prototype product development in zirconium alloys, UO<sub>2</sub> ceramics technology.

Facilities: UO<sub>2</sub> Ceramics Sintering; Particle Size Analyzer; X-Ray Diffraction; Vacuum Heat Treatment; Vacuum Brazing; Reactive Metals Welding.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.

Language(s) in Which Services are Provided: english.

#### **WESTON RESEARCH CENTRE, A DIVISION OF GEORGE WESTON LIMITED**

1047 Yonge Street, Toronto, Ontario, M4W 2L2.

##### **Weston Research Centre**

Admin. Contact: Ms. June Westerman, Administration Manager, Tel: (416) 922-5100.

Scientific Contact: Dr. G. Ross Lawford, Technical Director, Tel: (416) 922-5100.

Personnel: Total is 90 of which 60 are scientists and engineers.

Activities: Biotechnology: SCP, biopolymers, fuel alcohol, microbial lipids food products/ingredients; food processing/packaging technologies; methodologies for analytical technique; interactions of food components - mechanisms/implications.

Facilities: Biotechnology/fermentation - pilot and lab scale; food/biomass extruder; GC/HPLC; pilot food processing.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.

Language(s) in Which Services are Provided: english.

#### **WESTROC INDUSTRIES LTD**

2424 Lakeshore Rd. West, Mississauga, Ontario, L5J 1K4.

##### **Development Department**

Contact: Dr. R.B. Bruce, Technical Director, Tel: (416) 823-9881.

Personnel: Total is 7 of which 5 are scientists and engineers.

Activities: Manufacture of gypsum products and ancillary products; gypsum process development; synthetic gypsum; energy conservation.

Facilities: 3 IBM, PC XT, 2 Apple II Plus computers; wild 420 microscope; humidity cabinets; accumet selective ion analyser; datamite temperature datalogger; velometer; colorimeter; instron model 1130 (materials testing machine); viscometers.

Current or Potential Work Performed for: self or parent company.

Nature of Work Performed for Others: testing and analysis.

Language(s) in Which Services are Provided: english.

#### **WILLIAM STEVENS LIMITED**

10 Eton Place, Guelph, Ontario, N1E 3L5.

##### **Research Unit**

Contact: R.W.M.C. Stevens, President, Tel: (519) 837-3369.

Personnel: Total is 5 of which 3 are scientists and engineers.

Activities: Applied genetics.

Facilities: Computers.

Current or Potential Work Performed for: other clients.

Nature of Work Performed for Others: consultation.

Language(s) in Which Services are Provided: english.

#### **WILLOWGLEN SYSTEMS LTD**

1-1235 64th Avenue South East, Calgary, Alberta, T2H 2J7.

##### **R&D Department**

Contact: David Earl, Manager R&D, Tel: (403) 253-3051.

Personnel: Total is 4 of which 3 are scientists and engineers.

Activities: Development of industrial computer hardware and software products for supervisory control and data acquisition (SCADA) and process control applications.

Facilities: Microcomputer Hardware and Software; Development Facilities.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: english.

#### **WINDSOR MACHINE COMPANY LIMITED**

2965 Lake City Way, Burnaby, British Columbia, V5A 2Z9.

##### **Research Unit**

Admin. Contact: S. Kee, Executive Vice-President, Tel: (604) 420-5427.

Scientific Contact: Bryon Hodges, President and CEO, Tel: (604) 420-5427.

Personnel: Total is 8 of which 3 are scientists and engineers.

Activities: Chain saw related R&D: kickback, noise and vibration, cutting performance, guide bar - chain and sprocket performance. Manufacturing R&D: processes related to stamping, machining, heat treating and finishing of steel and alloy products.

Facilities: Kickback machine; semi-anechoic chamber; noise and vibration measuring equipment; metallurgical laboratory; tool room.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation, testing and analysis.

Language(s) in Which Services are Provided: english.

#### **WOODLOT SERVICE (1978) LTD.**

320 Maple Street, Fredericton, New Brunswick, E3A 3R4.

##### **Research Unit**

Contact: Robert C. Dick, Vice-President, Tel: (506) 472-3396.

Personnel: Total is 14 of which 4 are scientists and engineers.

Activities: Forest biomass; soil analysis; sample preparation; folian analysis; tissue analysis; forest inventory; freeze concentration.

Facilities: Convection ovens; Wiley mill; grinder; sieves.

Current or Potential Work Performed for: government, other clients.

Nature of Work Performed for Others: contract R&D, testing and analysis.

Language(s) in Which Services are Provided: english.

#### **WORTHINGTON PUMP DIVISION, DRESSER CANADA, INC.**

P.O. Box 40, Worthington Drive, Brantford, Ontario, N3T 5M5.

##### **Worthington Pump Division, Dresser Canada, Inc. - R&D Group**

Admin. Contact: A. Prang, Manager - Engineering, Tel: (519) 753-7381.

Scientific Contact: G. Davidson, Supervisor - Research, Tel: (519) 753-7381.

Personnel: Total is 5 of which 2 are scientists and engineers.

Activities: Basic research related to the transport of solids using centrifugal and rotary type pumps. Areas of study include hydrodynamics of pump operation, effects of solids content on pump performance and material

considerations for abrasive services. Fields of specialization include wear rates of slurry pumps in abrasive media and the application of hard metals and elastomeric materials for abrasion resistance. Other areas of study include application of centrifugal pumps on paper stock service and positive displacement pumps on non-newtonian services.

Facilities: 30,000 gallon, 20 inch pump test loop; high viscosity pump test loops; cavitation visualization facility; 600 gallon slurry testing facility.

Current or Potential Work Performed for: self or parent company, other clients.

Nature of Work Performed for Others: testing and analysis.

Language(s) in Which Services are Provided: english.

#### **WYCOVE SYSTEMS LTD**

101 Isley Avenue, Dartmouth, Nova Scotia, B3B 1S8.

##### **Research Unit**

Admin. Contact: Tim MacEachern, President,

Tel: (902) 465-4339.

Scientific Contact: David F. Gray, President,

Tel: (902) 465-4339.

Personnel: Total is 11 of which 7 are scientists and engineers.

Activities: Computer software development - scientific applications, scientific data handling, data presentation graphics, charting and mapping, system software. Algorithmic development - scientific procedures, scientific data handling. Modelling.

Facilities: Variety of computer graphics equipment.

Current or Potential Work Performed for: self or parent company, government, other clients.

Nature of Work Performed for Others: contract R&D, consultation.

Language(s) in Which Services are Provided: english.

#### **XEROX RESEARCH CENTRE OF CANADA, DIVISION OF XEROX CANADA, INC**

2660 Speakman Drive, Mississauga, Ontario, L5K 2L1.

##### **Research Unit**

Admin. Contact: Jerome Dvornch, Manager of

Administration, Tel: (416) 823-7091.

Scientific Contact: Dr. Robert H. Marchessault,

Vice-President & Manager of Research Centre,

Tel: (416) 823-7091.

Personnel: Total is 130 of which 105 are scientists and engineers.

Activities: Materials research for both xerographic and non-xerographic consumable supplies including toner, developer, photoreceptor, inks, and paper. Research in physical sciences, imaging chemistry, materials development, and materials chemistry.

Facilities: Nuclear magnetic resonance apparatus; chemical process engineering pilot plant; materials processing equipment (extrusion, micronization, coating); electron microscopes; xerographic materials test lab; TAPPI standard paper testing lab.

Current or Potential Work Performed for: self or parent company, government.

Nature of Work Performed for Others: contract R&D.

Language(s) in Which Services are Provided: english.

#### **XYTEL ENERGY LTD**

4129 Harvester Road, Burlington, Ontario, L7L 5M3.

##### **Research Unit**

Admin. Contact: K. Persad, President, Tel: (416) 632-1341.

Scientific Contact: Dr. R. Al Samadi, Vice President,

Engineering, Tel: (416) 632-1341.

Personnel: Total is 16 of which 10 are scientists and engineers.

Activities: Computers, software and hardware; process for chemicals, natural gas, heavy oil; biomass.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: english.

#### **YORKVILLE SOUND LTD**

80 Midwest Rd, Scarborough, Ontario, M1P 4R2.

##### **Research Unit**

Contact: Barb Hillier, Administration, Tel: (416) 751-8481.

Personnel: Total is 10 of which 2 are scientists and engineers. (Note: Total R&D personnel is 9 of which 4 are designers.)

Activities: Audio and signal processing systems.

Facilities: Standard electronic equipment.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: english.

#### **Z-LINE PRODUCTS LTD.**

510 Hargrave Street, Winnipeg, Manitoba, R3A 0X8.

##### **Research Unit**

Admin. Contact: David Stitz, President,

Tel: (204) 947-0881.

Scientific Contact: Allan Flam, Engineer,

Tel: (204) 947-0881.

Personnel: Total is 5 of which 1 is a scientist or engineer.

Activities: Radiant Heat (Electricity). Various products being tested for efficient heat dispersion. Market feasibility.

Facilities: Voltage Regulator; Voltage Meters; Watt Meters; Amp Meters; Dial Pack Temperature Indicator; Hi-Pot Tester.

Current or Potential Work Performed for: self or parent company.

Language(s) in Which Services are Provided: english.

#### **ZENAIR LTD**

King Road, Nobleton, Ontario, L0G 1N0.

##### **Research Unit**

Contact: Chris Heintz, President, Tel: (416) 859-4556.

Personnel: Total is 7 of which 3 are scientists and engineers.

Activities: Aircraft: aerodynamics, structure - static and dynamic; aircraft power plant and propellers.

Facilities: Flight platform; static test equipment; dynamic test equipment.

Current or Potential Work Performed for: self or parent company, other clients.

Nature of Work Performed for Others: consultation, testing and analysis.

Language(s) in Which Services are Provided: both english and french.

#### **ZENON ENVIRONMENTAL INC.**

845 Harrington Court, Burlington, Ontario, L7N 3P3.

##### **Research Unit**

Admin. Contact: Dr. A. Benedek, President,

Tel: (416) 639-6320.

Scientific Contact: E. Harrison, Manager, R&D,

Tel: (416) 639-6320.

Personnel: Total is 40 of which 25 are scientists and engineers.

Activities: Development of analytical methods in trace organics; treatability studies, process development, and pilot scale experiments for water and wastewater streams, as well as industrial process streams; development of novel RO and UF membranes; development specialized sensors, instruments and systems for water and wastewater.

Facilities: Comprehensive organics & inorganics  
laboratory; micro/instrument development laboratory;  
pilot plant; treatability laboratories; membrane  
production and testing.  
Current or Potential Work Performed for: self or parent

company, government, other clients.  
Nature of Work Performed for Others: contract R&D,  
consultation, testing and analysis.  
Language(s) in Which Services are Provided: both english  
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 Lavo Limitée  
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 MPB TECHNOLOGIES INC.  
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 Plastibeton Inc  
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 RCA Inc.  
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 Roctest Ltd/Ltée  
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#### REGION-K EASTERN ONTARIO

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INNOVATIVE TECHNOLOGY INC  
 Intellitech Canada Ltd  
 INTERA Technologies Ltd  
 Interactive Circuits and Systems Ltd  
 Intercontinental Data Control Corporation Ltd  
 JATOM SYSTEMS INC.  
 KENTING EARTH SCIENCES LIMITED  
 KER-TRAIN SYSTEMS LIMITED  
 KNUDSEN ENGINEERING LIMITED  
 KOM Inc.  
 LAKEFIELD RESEARCH Division of Falconbridge Ltd  
 LESLIE JONES & ASSOCIATES INC.  
 LUMONICS INC.  
 MAXIMA COMPUTER MANAGEMENT CONSULTANTS  
 LTD  
 Melville Shipping Ltd.  
 Miller Communications Systems Ltd  
 MITEL CORPORATION, SEMICONDUCTOR DIVISION  
 Mosaid Inc.  
 Murata Erie North America Ltd.  
 Nanotec Manufacturing Corporation  
 NORPAK CORPORATION  
 Optical Art Camera Corporation  
 Optotek Limited  
 OVERBURDEN DRILLING MANAGEMENT LIMITED  
 PEIRSON BUILDING SYSTEMS LTD.  
 Prior Data Sciences Ltd  
 Pylon Electronic Development Company Ltd.  
 QRL ANALYSIS CORPORATION  
 RELTEK INC  
 RENALD CARRIERE AND ASSOCIATES INC  
 Richard Brancker Research Ltd  
 Roy Ball Associates Limited  
 S.L. Ross Environmental Research Limited  
 S.T. Research Ltd.  
 Sander Geophysics Ltd  
 SaTel Consultants Limited  
 Scanada Consultants Limited  
 SEA-MET SCIENCES LTD.  
 SHL SYSTEMHOUSE INC.  
 SOFTWARE KINETICS LTD  
 Sperry Inc.  
 SURGIKOS CANADA INC  
 T E S Limited  
 Targa Electronics Systems Inc  
 TIL-TEK LIMITED  
 TRIDEX SYSTEMS INC.  
 Trillium Telephone Systems Inc.  
 Urban Transportation Development Corporation Limited

#### REGION-L CENTRAL ONTARIO

A E S DATA INC  
 A-B Biological Supplies Inc  
 A-CUBED INC  
 A.C. NIELSEN COMPANY OF CANADA LIMITED  
 Abitibi-Price Inc.  
 Adaptive Microelectronics Ltd  
 AEG Bayly Inc.  
 ALCHEM INC.  
 Allelix Inc  
 AMDAHL COMMUNICATIONS INC.  
 Andrew Antenna Company Limited  
 ARPECO ENGINEERING LIMITED  
 B.A. TRIPP & ASSOCIATES LTD  
 B.E.L. - Tronics Limited  
 Barder Industries Ltd  
 BASF Inmont Canada Inc  
 BBC ENGINEERING & RESEARCH LTD  
 Beak Consultants Limited

BOART CANADA INC.  
 Brouwer Turf Equipment Limited  
 BUSKRO GRAPHIC ENGINEERING LTD  
 C-I-L Inc.  
 CAE DIECAST LTD  
 Cambrian Engineering Group Ltd (The)  
 CANADIAN CANNERS LIMITED  
 Canadian Institute of Metalworking  
 Canadian Instrumentation and Research Limited  
 Canadian Seed Coaters Limited  
 CEDARLANE LABORATORIES LIMITED  
 Chemcraft Sadolin Inc  
 CHIPMAN  
 Cominco Ltd  
 COMPAIR CANADA INC.  
 COMPUTERIZED CUTTERS LTD.  
 Consultronics Ltd  
 CONTROL DATA CANADA LIMITED  
 Crone Geophysics Limited  
 Cryovac Division W. R. Grace & Co. Canada Ltd  
 Dayless Manufacturing (Canada) Limited  
 Dearborn Chemical Company Limited  
 DeSOTO COATINGS LIMITED  
 Diversey Wyandotte Inc  
 DOFASCO INC  
 Domglas Inc.  
 Duracell Inc.  
 DYNACON ENTERPRISES LTD  
 E.D. Smith and Sons Ltd.  
 ECO-TEC LIMITED  
 ELECTRONIC SURVEILLANCE CORPORATION  
 Engineering Research Associates - A Division of Tennyson,  
 Hansen, Mabson and Uffen Associates Limited  
 ENGLEHARD INDUSTRIES OF CANADA LTD  
 ERNST LEITZ CANADA LTD.  
 FOSTER WHEELER LIMITED  
 GALCO FOOD PRODUCTS LIMITED  
 GEAC Computers International Inc  
 GENAMATION INC  
 General Motors of Canada Ltd  
 General Refractories Company of Canada Ltd.  
 GEONICS LIMITED  
 Greening Donald Co. Ltd  
 GULF CANADA LTD  
 H.L. Blachford Ltd.  
 Hawker Siddely Canada Inc  
 HEVAC FIREPLACE FURNACE MFG LTD.  
 IAN W FRENCH AND ASSOCIATES LIMITED  
 INCO LIMITED  
 Indal Technologies Inc.  
 INDESCOR HYDRODYNAMICS INC.  
 INFO CENTRE LIMITEE  
 INVERPOWER CONTROLS LTD.  
 ISTECH Limited  
 John Deere Welland Works of John Deere Limited  
 Jordan & Ste-Michelle Cellars Division of T.G. Bright  
 Company Ltd.  
 Lapp Insulators Inc.  
 LePage's Limited  
 LIMNOS LIMITED  
 LONG MANUFACTURING LTD.  
 Mactac Canada  
 MADISON CHEMICAL INDUSTRIES INC.  
 MAGIC PANTRY FOODS INC.  
 McNeil Pharmaceutical (Canada) Ltd.  
 Menasco Aerospace Ltd  
 Metrex Instruments Limited  
 Mohawk Data Sciences-Canada Limited  
 Molson Breweries of Canada Ltd  
 MONITEQ LTD.  
 MONO RESEARCH LABORATORIES LTD.  
 Monserco Limited

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 Motorola Information Systems  
 MULTILIN INC  
 Network Data Systems Limited  
 NUCLEAR ACTIVATION SERVICES LIMITED  
 Ontario Paper Company  
 Opto-Electronics Inc.  
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 Picker International Canada Inc  
 Poss Design Limited  
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 Questor Surveys Ltd.  
 Rieder Distillery Ltd  
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 SANDOZ ANCA  
 Scanada Consultants Limited  
 Scantech Electronics Inc  
 Schlegel Canada Inc.  
 SCIEX - A Division of MDS Health Group Limited  
 SCINTREX LIMITED  
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 Sonotek Limited  
 St. Mary's Cement Company  
 Stake Technology Ltd  
 Stange Canada Inc.  
 Stelco Inc.  
 Sterling Drug Ltd.  
 Sterling Limited  
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 Tektron Equipment Corporation  
 Tele-Radio Systems Limited  
 Thomas J. Lipton Inc.  
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 Tridon Limited  
 Ultra Lasertech Inc.  
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 WESTROC INDUSTRIES LTD  
 Xerox Research Centre of Canada, Division of Xerox  
 Canada, Inc  
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 ZENAIR Ltd  
 Zenon Environmental Inc.

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 AEROSPACE ENGINEERING AND RESEARCH  
 CONSULTANTS LIMITED  
 ALLEN-DRERUP-WHITE LTD  
 ANAKIN RESEARCH INC  
 Andec Mfg. Ltd  
 Andico Manufacturing Limited  
 Aptec Engineering Limited  
 ASL COMPUTERS LTD.  
 Barringer Magenta Limited  
 Barringer Research Ltd  
 BIRD AND HALE LIMITED  
 Boojum Research Limited  
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 Limited  
 BROWN, BOVERI, HOWDEN INC  
 C-I-L Inc.

CABLESYSTEMS ENGINEERING, Division of Canadian  
 Cablesystems Ltd.  
 CAIL SYSTEMS LTD.  
 Canada Packers Inc.  
 Canadian Gas Research Institute  
 CIL Paints Inc  
 CIP Inc.  
 COMPUTER SERVICENTERS LTD.  
 Con-Serve Group Ltd  
 CONCORD SCIENTIFIC CORP  
 Connaught Laboratories Limited  
 CONSUMERS' GAS COMPANY LTD (THE)  
 Crosfield Muirhead (Canada) Ltd  
 D.A. Stuart Inc  
 DATALINE INC.  
 DE HAVILLAND AIRCRAFT CANADA LTD (THE)  
 Delta Engineering Ltd  
 DEXTRAN PRODUCTS LIMITED  
 DICON SYSTEMS LIMITED  
 DOMINION AUTOMOTIVE INDUSTRIES INC.  
 DRG INC.  
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 EMERY INTERNATIONAL DEVELOPMENTS LIMITED  
 ENGINEERING INTERFACE LIMITED  
 ERCO, division of Tenneco Canada Inc  
 Eyecorp Ltd  
 F.T. Gerson Limited  
 FEDERAL PIONEER LIMITED  
 First Spice Manufacturing Corporation Canada Ltd  
 FRC Composites Ltd  
 G.H. WOOD & CO. LTD  
 Garrett Manufacturing Limited  
 GEM SYSTEMS INC  
 General Comminution Inc  
 George Kelk Limited  
 Gigatek Ltd  
 Griffith Laboratories, Limited (The)  
 H.G.E. Inc  
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 HOFFMANN-LA ROCHE LIMITED  
 HONEYWELL LIMITED  
 Human Computing Resources  
 Hunttec (70) Limited  
 IBM CANADA LTD,  
 Industrial Adhesives division of Timminco Limited  
 INSYSTEMS CORPORATION  
 INTERNATIONAL PAINTS (CANADA) LIMITED  
 Intertech Engineering Corporation  
 Jenike & Johanson Ltd.  
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 JOLDON INVESTMENTS LIMITED  
 Kellogg Salada Canada Inc.  
 KelResearch Corporation  
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 LEITCH VIDEO LIMITED  
 LISLE-METRIX LTD  
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 LONGFORD EQUIPMENT INTERNATIONAL LIMITED  
 LOVAT TUNNEL EQUIPMENT INC.  
 Marshall Macklin Monaghan Limited  
 Massey-Ferguson Limited  
 Miles Air Products Ltd  
 Minmet Scientific Ltd  
 MORTON & PARTNERS LIMITED  
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 NAZ-DAR CANADA LIMITED  
 Nelson's Dairy

Numetrix Limited  
 Ontario Hydro  
 Optech Incorporated  
 Payton Scientific Limited  
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 Polygon Industries Ltd  
 POLYRESINS INC.  
 Prior Data Sciences Ltd  
 Promac Controls Inc  
 Reichhold Limited  
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 Rumble Equipment Ltd  
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 SAB NIFE Corporation  
 SANGAMO CANADA (DIVISION OF SCHLUMBERGER  
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 PURE GREENS LTD.  
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 Quatic Chemicals Limited  
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 TIMBERJACK INC  
 Trojan Technologies Inc  
 Turbotak Inc.  
 Uniroyal Goodrich Canada Inc.  
 UNITRON INDUSTRIES LTD  
 WATERLOO CENTRE FOR PROCESS DEVELOPMENT  
 WILLIAM STEVENS LIMITED  
 Worthington Pump Division, Dresser Canada, Inc.

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 Allied Automotive - Canadian Fram Limited  
 AQUANUMERICS INCORPORATED  
 Arvid Machine Tools Ltd.  
 Arvid Productivity Systems Inc.  
 BACH-SIMPSON LIMITED  
 BASF Inmont Canada Inc  
 Cablesare Inc  
 CANADIAN CANNERS LIMITED  
 Canviro Consultants Ltd  
 Champion Road Machinery Limited  
 CHORLEY & BISSET LTD CONSULTING ENGINEERS  
 CLARE BROTHERS  
 CONTROLLED SYSTEMS (WINDSOR) LIMITED  
 D.G. Henderson & Associates Ltd  
 Deb Swarfega Inc.  
 DENOVA LTD  
 Dexter-Lawson Products Limited  
 Diffracto Limited  
 Dow Chemical Canada Inc.  
 ELI LILLY CANADA INC  
 Enermodal Engineering Limited  
 ENERSHADE  
 Farmatic Inc  
 Fiberglas Canada Inc.  
 Frank Maine Consulting Ltd  
 FUNK SEEDS CIBA-GEIGY CANADA LTD.  
 Gay Lea Foods Cooperative Ltd  
 Hope Laboratories Ltd  
 HYBRID TURKEYS INC

## REGION-P NORTHERN ONTARIO

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 DIGITAL ENGINEERING INC.  
 KBM Forestry Consultants Inc.  
 Kidd Creek Mines Ltd  
 Miller Technology Inc  
 Phillip J. Richardson & Associates Inc.  
 Rio Algom Ltd

## REGION-R MANITOBA

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 Appin Solar Associates Inc  
 Boreal Projects Ltd  
 Brewing & Malting Barley Research Institute  
 Bristol Aerospace Limited  
 C S P Foods Ltd  
 Carte Electric Ltd  
 COMCHEQ SERVICES LIMITED  
 Conserver Group Inc (The)  
 E.J. Faraci and Associates Ltd.  
 ELI LILLY CANADA INC  
 Guertin Bros. Coatings and Sealants Ltd  
 Industrial Applications of Microelectronics Centre, Inc  
 Inrad Industrial R&D Ltd  
 Lion Industries Ltd  
 MALNAR INDUSTRIES LTD.

Manitoba Hydro  
 Phillips Paint Products (1968) Ltd  
 State Industries Ltd  
 Tantalum Mining Corporation of Canada Ltd  
 TNT Developments Ltd  
 UNIES Ltd.  
 Vansco Electronics Ltd.  
 VERSATILE FARM EQUIPMENT COMPANY  
 Z-LINE PRODUCTS LTD.

## REGION-S SASKATCHEWAN

BBT Geotechnical Consultants Ltd  
 BECK TECHNOLOGY INCORPORATED  
 BIOSTAR Inc.  
 Cambrian Engineering Group Ltd (The)  
 Canadian Seed Coaters Limited  
 Flexi-coil Ltd.  
 IPSCO INC  
 JOYTEC LTD  
 LC Communications Ltd  
 Morris Rod-Weeder Co Ltd  
 Northern Soil Technologies Ltd  
 POS Pilot Plant Corporation  
 Potash Corporation of Saskatchewan Mining Ltd  
 RAM Industries Ltd  
 Rite Way Manufacturing Co Ltd  
 Saskatchewan Minerals  
 Saskatchewan Power Corporation  
 Saskatchewan Wheat Pool Product Development, Farm  
 Service Division  
 SCI-TEC Instruments Inc.  
 SED Systems Inc.  
 SENSTEK Ltd  
 SMITH-ROLES LTD  
 Tri-Tec Growth Systems Inc. (Saskatoon)

## REGION-T ALBERTA

A. Comeau & Associates Ltd.  
 Alberta Dairymen's Association Research Unit  
 Alberta Government Telephones Commission  
 Alberta Livestock Transplants Ltd.  
 ALBERTA MASONRY INSTITUTE  
 Alberta Sulphur Research Ltd  
 Alberta Wheat Pool  
 Amerigo Technology Ltd  
 ARCTEC CANADA LIMITED  
 BBT Geotechnical Consultants Ltd  
 BETA MACHINERY ANALYSIS LTD  
 Bow Valley Resource Services Ltd  
 C-I-L Inc.  
 Canadian Formation Testers Ltd  
 CANADIAN FRACMASTER LTD.  
 CANADIAN RIG LTD.  
 CAPROCO CORROSION PREVENTION LTD  
 Cattleland Feedyards Ltd.  
 Caulfield Engineering  
 CH2M HILL Engineering  
 Chembiomed Ltd  
 City of Calgary Engineering Dept.  
 Coal Mining Research Company  
 Cominco Ltd  
 Commonwealth Geophysical Development Company Ltd  
 COMPUTER MODELLING GROUP  
 Continental Laboratories (1985) Ltd.  
 D B Robinson & Associates Ltd  
 Danecraft Mechanical Design Limited

Det Norske Veritas (Canada) Ltd  
 Dow Chemical Canada Inc.  
 Drill Systems Division of Dualco Manufacturing Ltd  
 EDO Canada Ltd  
 GEORGE & NICK'S MACHINE WORKS LTD  
 Global Thermoelectric Power Systems Ltd  
 Hycal Energy Research Laboratories Ltd.  
 Imperial Oil Limited  
 INTERA Technologies Ltd  
 JOSEPH SKVARIL ARCHITECT LTD  
 Lakeside Research - Division of Lakeside Feeders Ltd  
 M.J. O'Connor & Associates Ltd  
 MONENCO CONSULTANTS LTD.  
 Murphy Oil Company Ltd  
 NORTECH SURVEYS (CANADA) INC  
 Norwest Soil Research Ltd  
 NOVA/HUSKY RESEARCH CORPORATION LTD.  
 NOVATEL COMMUNICATIONS LTD.  
 Pembina Resources Ltd  
 Pengalta Research & Development Ltd  
 Petro-Canada  
 Petroleum Recovery Institute  
 PROCESS & INVENTIONS CORPORATION  
 Prolite Plastics Ltd  
 Raylo Chemicals Ltd.  
 RE/SPEC Ltd.  
 RUSSELL ULTRA SOUND SERVICES  
 Scientific Software - INTERCOMP  
 Shell Canada Ltd  
 SHERREX SYSTEMS LTD  
 Sherritt Gordon Mines Limited  
 SULFURCRETE PRODUCTS INC  
 Sunearth Software Inc.  
 Syncrude Canada Ltd  
 Synerlogic Inc.  
 Torchinsky Consulting (1976) Ltd  
 Trans-Canada Resources Ltd  
 Turbo Resources Limited, Lubricants Marketing Division  
 UNOCAL Canada Ltd.  
 Veritas Software Ltd.  
 Versatile Noble Cultivators Company  
 Viatic Resource Systems Inc.  
 Wellsdale Research Limited  
 WILLOWGLEN SYSTEMS LTD

## REGION-V BRITISH COLUMBIA

AC Statpower Inc.  
 Allied Engineering Company  
 AMBREX INTERNATIONAL INC.  
 Anatek Microcircuits Inc.  
 Arctic Sciences Ltd.  
 Argus Control Systems Ltd  
 ASSOCIATED R&D ENGINEERING INC.  
 Autonetics Research Associates Inc  
 B H Levelton & Associates Ltd.  
 B.C. Hydro  
 Bacon, Donaldson & Associates Ltd  
 BALLARD RESEARCH INC  
 Beales Steel Products Ltd  
 BENNETT ENVIRONMENTAL CONSULTANTS LTD.  
 BORDEN CHEMICAL, Division of The Borden Company  
 Limited  
 Bow Valley Resource Services Ltd  
 C-I-L Inc.  
 CAD-Ware Engineering Programs Ltd.  
 CAN TEST LTD  
 CETEC ENGINEERING CO. INC.  
 Cominco Ltd  
 Commercial Electronics Ltd

COMPUTECH CONSULTING CANADA LTD  
 Computrol Systems Ltd  
 Council of Forest Industries of B.C.  
 CTF SYSTEMS INC.  
 Danecraft Mechanical Design Limited  
 Daniels Electronic Ltd  
 DATATECH SYSTEMS LTD  
 DEES COMMUNICATIONS ENGINEERING LTD  
 Dobrocky Seatech Ltd.  
 E.V.S. Consultants Ltd.  
 Econotech Services Limited  
 Essa Environmental and Social Systems  
 Forest Engineering Research Institute of Canada  
 Forintek Canada Corp.  
 GENERAL CYBERNETICS CORPORATION  
 GLENAYRE ELECTRONICS LTD.  
 Hatfield Consultants Ltd  
 Hawker Siddely Canada Inc  
 Helix Biotech Ltd.  
 INTEG-Intercontinental Engineering Ltd  
 International Submarine Engineering  
 International Telemetry Ltd  
 KER, PRIESTMAN & ASSOCIATES LTD.  
 Lake City Technical Products Inc.  
 Macdonald, Dettwiler and Associates Ltd  
 MacMillan Bloedel Limited  
 MESOTECH SYSTEMS LTD.  
 Microtel Limited  
 Moli Energy Limited  
 MORRIS INDUSTRIES LTD  
 Mustang Industries Inc  
 Muth Air Pac Inc.  
 NAWITKA Renewable Resource Consultants Limited  
 Nexus Engineering Corp.  
 Pacific Trident Mariculture Ltd.  
 POLAR TECH LTD  
 Safer Agro-Chem Ltd  
 SANDWELL SWAN WOOSTER INC.  
 SAR Engineering  
 SEAKEM OCEANOGRAPHY LTD.  
 SEASTAR INSTRUMENTS LTD  
 SEATRONICS TECHNOLOGIES LTD  
 SOLARSYSTEMS INDUSTRIES LTD  
 SOLWAY ENERGY CORPORATION  
 STORK CRAFT LTD  
 Stuart Plastics Ltd  
 Sun-Rype Products Ltd  
 Swan Wooster Engineering Co. Ltd.  
 Sydney Development Corp.  
 Syndel Laboratories Ltd  
 Techwest, A Division of Fleet Aerospace Corp.  
 Teleflex (Canada) Ltd  
 Theodor D. Sterling Ltd  
 UMA Engineering Ltd.  
 Vancouver Petrographics Ltd  
 Vortek Industries Ltd  
 Warner Shelter Corporation  
 WEISER INC  
 Westbay Instruments Ltd  
 Windsor Machine Company Limited

**NOTE:**

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